# Mathematical English Usage

## A Dictionary

by

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Updated July 28, 2022

Available online at: http://www.impan.pl/Dictionary

# A

**a, an** We conclude this section with a useful lemma. • Hence all that we have to do is choose an $x$ in $X$ such that..... • [Use 'a' or 'an' depending on pronunciation and not spelling.] • We conclude that there is a smallest integer $p$ for which $f(p) = 0$. • Theorem 2 has a very important converse, the Radon-Nikodym theorem. • Our present assumption implies that the last inequality in (8) must actually be an equality. • Some of the isomorphism classes above will have a rank of 2. • The only additional feature is the appearance of a factor of 2. • This says that $f$ is no longer than the supremum of the boundary values of $G$, a statement similar to (1). • This term derives from "quiver", a notion used in representation theory of algebras. • The earth has an average density 5.5 times that of water. • If $p = 0$ then there are an additional $m$ arcs.

**abbreviate** [sth for sth; sth as sth; sth to sth; *see also*: brevity, short] We shall abbreviate the expression (3) to $F(k)$. • We abbreviate this as $f = g$ a.e. • Thus, in abbreviated notation,.....

**abbreviation** [for sth; *see also*: shorthand, short] Note that (3) is merely an abbreviation for the statement that.....

**able** [to do sth; *see also*: can] Using some facts about polynomial convexity, we are able to deduce..... • It seems plausible that..... but we have been able to establish this only in certain cases. • However, we have thus far been unable to find any magic squares with seven square entries.

**abound** [*see also*: numerous, plentiful, profusion, abundance, variety] Examples abound in which $P$ is discontinuous.

**about** [*see also*: roughly, approximately] The Taylor expansion of $f$ about ⟨around⟩ zero is..... • If $s_0$ lies below $R_{-2}$, then we can reflect about the real axis and appeal to the case just considered. • These slits are located on circles about the origin of radii $r_k$. • The diameter of $F$ is about twice that of $G$. • Then $n(r)$ is about $kr^n$. • Let $A$ denote the rectangle $B$ rotated through $\pi/6$ in a clockwise direction about the vertex $(0, 1)$. • What would this imply about the original series? • What about the case where $q > 2$? • It is hoped that a deeper understanding of these residues will help establish new results about the distribution of modular symbols. • On the other hand, there is enormous ambiguity about the choice of $M$. • In this section we ask about the extent to which $F$ is invertible. • Here the interesting questions are not about individual examples, but about the asymptotic behaviour of the set of examples as one or another of the invariants (such as the genus) goes to infinity. • However, as we are about to see, this complication is easily handled. • This brings about the natural question of whether or not there is any topology on the set of all possible itineraries. • The link between differential equations and homotopy groups first came about as a result of the realization that ellipticity of a differential operator can be defined in terms of its symbol.

**above** [*see also*: foregoing, precede, previous] The function $F$ is bounded above ⟨below⟩ by 1. • By the above,..... • Let $T$ be an isometric semigroup as above. • In the notation above ⟨In the above notation⟩,.....

**absence** [*see also*: lack] The location of the zeros of a holomorphic function in a region $\Omega$ is subject to no restriction except the obvious one concerning the absence of limit points in $\Omega$. • However, in the absence of an if-and-only-if condition for spectral boundedness we have to use the slightly stronger assumptions of Proposition 4. • [Note the difference: absence = non-presence; lack = shortage of something desirable.]

**absorb** The second term can be absorbed by the first.

**abstract** It seems that the relations between these concepts emerge most clearly when the setting is quite abstract, and this (rather than a desire for mere generality) motivates our approach to the subject. • This abstract theory is not in any way more difficult than the special case of the real line.

**abundance** [*see also*: wealth, variety, profusion, numerous] The monograph is illustrated with an abundance of figures and diagrams.

**abuse** By abuse of notation, we continue to write $f$ for $f_1$. • We shall, by convenient abuse of notation, generally denote it by $x_t$ whatever probability space it is defined on. • With the customary abuse of notation, the same symbol is used for..... Here, we abuse notation slightly and use $P$ to also denote the homotopy class of $p$.

**accessible** [to sb] Thus the paper is intended to be accessible both to logicians and to topologists. • The present paper is motivated by the desire to make the subject as accessible as possible.

**accidental** [*see also*: deliberately, intentionally] The use of the word 'generic' is not accidental here.

**accommodate** [*see also*: account, cover] To prepare the ground for this deduction, we first modify Theorem 3 to accommodate [= take into account] sets which are relatively dense in a suitably pseudorandom set.

**accomplish** [*see also*: complete, finish, do, perform] We can accomplish both tasks by showing that..... • Actual construction of..... may be accomplished in a variety of ways.

**accord** [*see also*: agree, correspond, match] This accords with the intuition that as we pass down the coding tree, we find out more and more detailed information about the ordering actually represented.

**accordance** [*see also*: agreement] Choose $\delta$ in accordance with Section 8. • Here, in accordance with the usual summation convention, we sum over any index which appears as both a subscript and a superscript.

**according** [as X or Y; to sth; to whether X or Y] The solutions are $f$ or $g$ according as $t = 1$ or $t = 2$. • The curvature is positive, zero, or negative according to whether two geodesics initially perpendiculat to a short geodesic arc through $p$ converge, stay parallel, or diverge. • Then $F$ can be decomposed according to the eigenspaces of $P$. • Choose $S_k$ according to the following scheme. • The middle part of Table 2 compares the classification according to max $a_i$, where only the longitudinal information is utilized, with those according to max $b_{ik}$, where both longitudinal and survival information are used.

**accordingly** [*see also*: respectively, suitably] The player has to decide which of the two strategies is better for him and act accordingly. • Write $A = BC$, factor $a = bc$ accordingly, and let.....

**account** **1** [of sth; *see also*: accommodate, description] A very readable account of the theory has been given in [Zag]. • We are indebted here to Villani's account (see [2]) of a standard generalization of convex conjugacy. • For a recent account we refer to [4]. • See the simplified account in [2, Section 4]. • See [17] for a brief account of the results obtained. [NOT "the obtained results"] • The Markov chain $z_k$ takes no account of how long the process stays in $V$. • On account of (5), we have..... • We must take account of the fact that $A$ may have a substantial

effect on the input length.
**2** [for sth; *see also*: explain, justify, reason, represent] This theorem accounts for the term "subharmonic". [= explains] • So all the terms of (2) are accounted for, and the theorem is proved. • He accounts for all the major achievements in topology over the last few years. [= He records] • Firms employing over 1000 people accounted for 50% of total employment. [= represented 50%]

**accurate** [*see also*: precise] The zeros of $L$-functions are all accurate to within $10^{-5}$.

**achieve** [*see also*: attain, reach, take, gain] Equality is achieved only for $a = 1$. • The function $g$ achieves its maximum at $x = 5$. • Among all $X$ with fixed $L^2$ norm, the extremal properties are achieved by multiples of $U$. • This achieves our objective of describing.....

**achievement** [*see also*: result] He accounts for all the major achievements in topology over the last few years. • Their remarkable achievement seemed to validate John's claim. However, it soon turned out that..... • a considerable ⟨extraordinary/fine/important/impressive/outstanding/significant⟩ achievement

**acknowledge** We acknowledge a debt to the paper of Black [7]. • This research was initiated when the first author was visiting the University of Alberta in the summer of 2008; the financial support and kind hospitality are gratefully acknowledged. • We also acknowledge useful discussions with J. Brown. • The author gratefully acknowledges the referee's helpful comments pertaining to the first draft of this paper. • [Do not write "I acknowledge Dr. Brown for....." if you mean *I wish to thank Dr. Brown for.....*]

**acquire** [*see also*: get] Thus, the tensor algebra acquires a graded algebra structure.

**across** Along the way, we come across some perhaps unexpected rigidity properties of familiar spaces.

**act** [*see also*: operate, proceed] We make $G$ act trivially on $Y$. • Suppose that $F$ and $G$ commute up to homotopy when acting by multiplication on the left. • Acting on the resulting equation by $w$ gives (b). • The player has to decide which of the two strategies is better for him and act accordingly.

**action** All of the action in creating $S_{i+1}$ takes place in the individual cells of type 2 or 3. • Away from critical points, the action of $G$ is reminiscent of the action of a cyclic group of order $d$. • The goal of the present paper is to give a description of this kernel $T(G, H)$, valid for *all* $G$ and $H$, *in purely elementary terms*, notably not using stable categories, nor representations, but essentially only the action of $G$ by conjugation on the lattice of its $p$-subgroups.

**actual** Actual construction of..... may be accomplished in a variety of ways. [= Real construction; do not use "actual" if you mean *present* or *current*.]

**actually** [= in fact; despite what you may think; ≠ at present; *see also*: fact, more] The operator $A$ is not merely symmetric, but actually selfadjoint. • Actually, Theorem 3 gives more, namely,..... • Actually, the proof gives an even more precise conclusion:..... • Although the definition may seem artificial, it is actually very much in the spirit of Darbo's old argument in [5]. • Our present assumption implies that the last inequality in (8) must actually be an equality. • We then provide constructions to show that each of the cases listed can actually occur. • [Do not write "Actually we prove (2) for $n = 1$" if you just mean *Now we prove (2) for* $n = 1$.]

**adapt** [$\neq$ adopt; *see also*: adjust, alter, change, convert, modify] The proof of Theorem 5 is easily adapted to any open set. • The method of proof of Theorem B can be adapted to extend the right-to-left direction of Mostowski's result by showing that..... • This definition is well adapted for dealing with meromorphic functions. • The hypotheses of [4] are different, however, and do not seem to adapt easily to the time-inhomogeneous case.

**adaptation** [*see also*: adjustment, modification, variation] Our method of proof will be an adaptation of the reasoning used on pp. 71–72 of [3].

**add** [*see also*: sum, supplement, total] Adding equations (2) and (3), we obtain..... [NOT "Adding by sides"] • The terms with $n > N$ add up to less than 2. • This interpretation does little, in sum, to add to our understanding of.....

**addition** Addition of (2) and (3) gives..... • The set $S$ is a semigroup with respect to coordinatewise addition. • If $h$ is modified by the addition of a suitable constant, it follows that..... • The addition of a single hyperedge to $G$ changes $N(G)$ by at most $k$. • In addition to illustrating how our formulas work in practice, it provides a counterexample to Brown's conjecture. • In addition to $f$ being convex, we require that..... • In addition to a contribution to $W_1$, there may also be one to $W_2$. • Assume, in addition to the hypotheses of Exercise 4, that.....

**additional** [*see also*: extra, further, more] Now $F$ has the additional property of being convex. • This solution has the additional advantage of being easily computable. • If $p = 0$ then there are an additional $m$ arcs. [Note the article *an*.]

**additionally** [*see also*: also, moreover] Now $F$ is additionally assumed to satisfy.....

**address** [*see also*: deal, take up] Strong compactness will be addressed in Section 3. • The main problems that we address are..... • Addressing this issue requires using the convergence properties of Fourier series. • We close this article by addressing, in part, the case of what happens if we replace the map $T$ by convolution.

**adequate** [Do not write "vector of adequate size" if you mean *vector of appropriate size.*] • [Do not write "by an adequate translation" if you mean *by a suitable translation.*]

**adhere** [to sth; *see also*: adopt] We adhere to the convention that $0/0 = 0$.

**ad hoc** [*see also*: provisional, temporary] With Lemma 2 in mind, we make the following ad hoc definition.

**adjoin** If we adjoin a third congruence to $F$, say $a = b$, we obtain..... • The extended real number system is $R$ with two symbols, $\infty$ and $-\infty$, adjoined.

**adjust** [*see also*: alter, adapt, change, modify] In the latter case we may simply adjust $F$ to equal 1 on the Borel set where it falls outside the specified interval. • The constants are so adjusted in (6) that (8) holds.

**adjustment** [*see also*: adaptation, modification] Although these proofs run along similar lines, there are subtle adjustments necessary to fit the argument to each new situation.

**admit** [sth; of sth; *see also*: permit, allow] The continuum $Y$ is tree-like since it admits a map onto $X$. • This inequality admits of several interpretations.

**adopt** [≠ adapt; *see also*: adhere, take] We adopt throughout the convention that compact spaces are Hausdorff. • We adopt the convention that the first coordinate $i$ increases as one goes downwards, and the second coordinate $j$ increases as one goes from left to right. • To avoid undue repetition in the statements of our theorems, we adopt the following convention. • To prove the desired exactness we again adopt the set-up of the first two paragraphs of the proof. • This is the point of view adopted in Section 3. • Furthermore, adopting this strategy considerably eases constructing a coding tree from a linear order. • We could have adopted an approach to proving Theorem 2 along a line of reasoning which bears greater resemblance to the treatment of the analogous result in Section 1. • Let us adopt the shorthand $F := FM_iN_i$.

**advance** [*see also*: development] The primary advance is to weaken the assumption that $H$ is $C^2$, used by previous authors, to the natural condition that $H$ is $C^1$. • Remarkable advances have been made recently in the understanding of.....

**advantage** [of sth over sth; of doing sth; *see also*: merit, benefit] One major advantage of..... is that..... • The advantage of using..... lies in the fact that..... • This solution has the additional advantage of being easily computable. • This approach fails to take advantage of the Gelfand topology on the character space. • We take advantage of this fact on several occasions, by not actually specifying the topology under consideration. • On the other hand, as yet, we have not taken advantage of the basic property enjoyed by $S$: it is a simplex. • a considerable ⟨decisive/definite/obvious/main/significant⟩ advantage

**advantageous** [*see also*: helpful, useful] In this case it is advantageous to transfer the problem to (say) the upper half-plane.

**advent** However, with the recent advent of simulation based inference, the need for analytically tractable posteriors is no longer critical.

**affect** [*see also*: influence] Altering finitely many terms of the sequence $u_n$ does not affect the validity of (9). • We show that one can drop an important hypothesis of the saddle point theorem without affecting the result. • How is the result affected if we assume merely that $f$ is bounded? • If $a$, $b$, and $c$ are permuted cyclically, the left side of (2) is unaffected. • Properties involving topological centres are unaffected by a change to an equivalent weight.

**affirmative** We give an affirmative answer to the question of [3].

**afford** [*see also*: provide, furnish, supply, yield] A counterexample is afforded by the Klein–Gordon equation. • We can now pose a problem whose solution will afford an illustration of how (5) can be used. • Having illustrated our method in Section 2, we can afford to be brief in our proof of Theorem 5.

**afield** To go into this in detail would take us too far afield.

**aforementioned** Our first result generalizes (8) by exploiting some general facts seemingly overlooked by the aforementioned authors. • We underline that the aforementioned results in [1] all rely on the conformality of the underlying construction.

**after** The proof of (8) will be given after we have proved that..... • We defer the proof of the "moreover" statement in Theorem 5 until after the proof of the lemma. • After making a linear transformation, we can assume..... • The desired conclusion follows after one divides by $t$ and lets $t$ tend to 0. • However, as pointed out right after (5),..... • ..... •(with $U$ defined just after (7)).....

• This theorem was proved by Kohn some 40 years before it was rediscovered by Birkhoff, after whom it was named.

**again** Hence, by (7) again, we have..... • Finally, case (E) is completed by again invoking Theorem 1. • The operator $H$ is again homogeneous.

**against** No specific evidence against the conjecture has been produced yet.

**agree** [*see also*: accord, correspond, match] Our definition agrees with the one of [3]. • The liftings on $A$ and $B$ agree on $A \cap B$, hence we can piece them together to obtain..... • Say the signatures agree in the $j$th entry.

**agreement** [*see also*: accordance] This is in agreement with our previous notation. • With this agreement, it is clear that.....

**aid** [*see also*: help] The solutions can be carried back to $H(V)$ with the aid of the mapping function $\phi$. • We see with the aid of an integration by parts that..... • We now construct a group that will be of aid in determining the order of $G$. • We thank Jacob Hicks for his substantial computational aid.

**aim** **1** [*see also*: desire, end, goal, object, objective] Our first aim is to study the ergodic properties of $T$. • Our aim here is to give some sort of "functorial" description of $K$ in terms of $G$. • This connection has been exploited to construct various infinite families, with the aim of filling possible gaps. [NOT "with the aim to fill"] • In the remainder of this section, we study some properties of $K$, with the eventual aim (not realized yet) of describing $K$ directly using $G$. • the broad ⟨general/central/main/major/primary/limited/modest/underlying/original⟩ aim
**2** [to do sth, at sth, for sth; *see also*: design, intend] We aim to prove the following inequality:..... • These results therefore describe the very close connection between the method of encoding and the structures we are aiming to classify. • Aiming for a contradiction, suppose that.....

**alas** [*see also*: unfortunately] Having established (1), one might be tempted to try to extend this result to general $p$ through the choice of a suitable ideal $B$. Alas, as we shall see now, this attempt is futile.

**albeit** [= though] However, we shall show in Section 3 that this simply results in Definition 3 again, albeit with complex weight. • It is proved in [1] (albeit with a slightly different formulation) that.....

**algebra** By elementary algebra, we can show that.....

**algorithm** [to do sth; for doing sth] It is obvious that the above theorem supplies an algorithm to effectively recognize whether $SP$ is in $A$. • He used a new version of an algorithm for finding all normal subgroups of up to a given index in a finitely presented group. • The original construction was an algorithm that took as input a finite presentation for a group $Q$ and gave as output a cancellation presentation for a group $G$ and an epimorphism $G \to Q$.

**all** [*see also*: any, each, every, whole, total] Hence all that we have to do is choose an $x$ in $X$ such that..... • Thus, all that remains is to repeat the construction for $f$ in place of $g$. • An examination of the argument just given reveals that this is all we have used. • The cohomology groups $H^q(E)$ all vanish except possibly in one single dimension. • All but a finite number of the $G_s$ are empty. • The goal of this section is to eliminate all the potential primes from $P$ except from 2 and 3. • a manifold all of whose geodesics are closed [= a manifold whose geodesics are all closed] [NOT "a manifold whose all geodesics are closed"] • Now $E$, $F$ and $G$ all extend to $U$. • They all have their supports in $V$. • They are all zero at $p$. • They should all be zero at $p$. • [Note the position of *all* in the last four examples: it is placed after the auxiliary verb; if there is no auxiliary, it is placed before the main verb, but if the verb is *be*, it is placed after it.] • This map extends to all of $M$. • These volumes bring together all of R. Bing's published mathematical papers. • If $t$ does not appear in $P$ at all, we can jump forward $n$ places. • The last integral is over a horizontal line in $P$, and if this argument is correct at all, the integral will not depend on the particular line we happen to choose. • But $A_n z^n$ is much larger than the sum of all the other terms in the series $\sum A_k z^k$. • Thus $A$ is the union of all the sets $B_x$. • the space of all continuous functions on $X$ • the all-one sequence • Any vector with three or fewer 1s in the last twelve places has at least eight 1s in all. • The elements of $G$, numbering 122 in all, range from 9 to 2000.

**allow** [sth; for sth; sth to be sth; sb to do sth; *see also*: enable, permit, admit, let, possible] These theorems allow one to guess the Plancherel formula. [OR allow us to guess; *not*: "allow to guess"] • As the space of Example 3 shows, complete regularity of $X$ is not enough to allow us to do that. • This allows proving the representation formula without having to integrate over $X$. • This easily allows the cases $c = 1, 2, 4$ to be solved. • This allows the proof of the continuity of $G$ to go through as before. • By allowing $f$ to have both positive and negative coefficients, we obtain..... • It is therefore natural to allow (5) to fail when $x$ is not a continuity point of $F$. • The limit always exists (we allow it to take the value $\infty$). • Lebesgue discovered that a satisfactory theory of integration results if the sets $E_i$ are allowed to belong to a larger class of subsets of the line. • In [3] we only allowed weight functions that were $C^1$. • It should be possible to enhance the above theorem further by allowing an arbitrary locally compact group $L$. • Here we allow $a = 0$. • We deliberately allow that a given $B$ may reappear in many different branches of the tree. • General spectrally bounded operators do not allow for a detailed structure theory. [= It does not make sense to think of it.] • Allowing for inflation, this is less than he earned in 1998. [= taking into account inflation] • However, for these techniques to succeed, not only must one variable of (3.1) be free to take on any colour, but it is also necessary for the solution set to possess a well-factorable parametrization, allowing for [= allowing] the theory of multiplicative functions to come into play. • Case 3 is disallowed since it results in a disconnected curve on $S$, contradicting the tightness of $P$.

**allowable** We denote the infimum of all allowable constants $C$ by $T_2(E)$.

**allude** [to sth; *see also*: mention, refer] We now come to the theorem which was alluded to in the introduction of the present chapter. • One should remark that the ambiguity alluded to in Remark 3 disappears when talking about an affine field.

**almost** [*see also*: nearly, practically] It is almost as easy to find an element..... • Incidentally, the question of whether $K(E)$ is amenable for specific Banach spaces $E$ seems to have received almost no attention in the literature.

**alone** [*see also*: only, solely] Neither (1) nor (2) alone is sufficient for (3) to hold. • Now $M$ does not consist of 0 alone. • Then $F$ is a function of $x$ alone.

**along** This is derived in Section 3 along ⟨together⟩ with a new proof of Morgan's theorem. • The proof proceeds along the same lines as the proof of Theorem 5, but the details are more complicated. • For direct constructions along more classical lines, see [KL]. • Although these proofs run along similar lines, there are subtle adjustments necessary to fit the argument to each new situation. • Along the way, we come across some perhaps unexpected rigidity properties of familiar spaces.

**already** This has already been proved in Section 4. [NOT "This has been proved already in Section 4."] • This idea is very little different from what can already be found in [2]. • We put $b$ in $R$ unless $a$ is already in. • In the physical context already referred to, $K$ is the density of..... [Note the double $r$ in *referred.*] • Inserting additional edges destroys no edges that were already present.

**also** [*see also*: moreover, furthermore, likewise, too] Hence $f_n$ also converges to $f$. • We shall also leave to the reader the proof of (5). • Since $R$ is a polynomial in $x$, so also is $P$. • The map $G$ is not convex and also not $C^1$. [Compare: The map $F$ is not convex, and $G$ is not convex either. Use *either* when there is a similarity between the two negative statements.] • It is also not difficult to obtain the complete additivity of $\mu$. •

**alter** [*see also*: adjust, change, convert, modify, transform] We shall need ways of constructing new triangulations from old ones which alter the $f$-vector in a predictable fashion. • Altering finitely many terms of the sequence $u_n$ does not affect the validity of (9). • The theorem implies that some finite subcollection of the $f_i$ can be removed without altering the span.

**alternate** The terms of the series (1) decrease in absolute value and their signs alternate. • Successive vertices on a path have alternating labels.

**alternately** Every path on $G$ passes through vertices of $V$ and $W$ alternately.

**alternative** An alternative way to analyze $S$ is to note that..... • Here is an alternative phrasing of part (1):..... • An ingenious alternative proof, shorter but still complicated, can be found in [MR].

**alternatively** Alternatively, it is straightforward to show directly that.....

**although** [*see also*: though] Although [1] deals mainly with the unit disc, most proofs are so constructed that they apply to more general situations. • Although these proofs run along similar lines, there are subtle adjustments necessary to fit the argument to each new situation. • Although the definition may seem artificial, it is actually very much in the spirit of Darbo's old argument in [5]. • Now $f$ is independent of the choice of $\gamma$ (although the integral itself is not). • Thus, although we follow the general pattern of proof of Theorem A, we must also introduce new ideas to deal with the lack of product structure. • Although standard, the notion of a virtual vector bundle is not particularly well known.

**altogether** [*see also*: completely, total, whole] However, we prefer to avoid this issue altogether by neglecting the contribution of $B$ to $S$. • There are forty-three vertices altogether.

**always** The problem is that, whatever the choice of $F$, there is always another function $f$ such that..... • The induced topology is not compact, but we can always get it to be contained in a Bohr topology. • The vector field $H$ always points towards the higher $A$-level.

**ambiguity** On the other hand, there is enormous ambiguity about the choice of $M$. • One should remark that the ambiguity alluded to in Remark 3 disappears when talking about an affine field. • When there is no ambiguity we drop the dependence on $B$ and write just $Y_T$ for $Y_{T,B}$. • This also resolves the ambiguity introduced earlier in choosing an order of the lifts of $U$.

**amenable** [to sth] The gradient flow case is more amenable to analytical treatment because.....

**among** [= amongst; *see also*: between, of, out of, include] Among the attempts made in this direction, the most notable ones were due to Jordan and Borel. • Among all $X$ with fixed $L^2$ norm, the extremal properties are achieved by multiples of $U$. • If $a_n$ is the largest among $a_1, ..., a_n$, then..... • Our main results state in short that MEP characterizes type 2 spaces among reflexive Banach spaces. • The existence of a large class of measures, among them that of Lebesgue, will be established in Chapter 2. • There are several theorems for a number of other varieties. Among these are the Priestley duality theorem and..... • the number of solutions $(x_1, \ldots, x_n)$ in which there are fewer than $r$ distinct values amongst the $x_i$ • The next corollary shows among other things that..... [NOT "among others"] • Our result generalizes Urysohn's extension theorems, among others. [= among other theorems] • It was later developed in a measure-theoretic context by Kantorovich [7] and Ornstein [11], among others. • This point of view is discussed in Section 2 and, among other places, in [H5].

**amount** **1** The quantities $F$ and $G$ differ by an arbitrarily small amount. • Thus $\theta$ will be less than $\pi$ by an amount comparable to $a(s)$. • It is intuitively clear that the amount by which $S_n$ exceeds zero should follow the exponential distribution. • It contributes half of the amount on the right hand side of (1). • There has since been a considerable amount of work exploring the extent to which $G_1$ can differ from $G_2$, but the existence of groups of the sort described in the following theorem has remained unknown.
**2** [to sth; to doing sth; *see also*: total, add up] When $n = 0$, (7) just amounts to saying that..... • This just amounts to a choice of units. • Consumer spending on those items amounts to $9 billion. • Internet sales still amounted to only 3% of all retail sales in November.

**analogous** [to sth] An analogous situation to the one considered in this paper has been studied, to great effect, by Dasgupta and his coauthors. • The theory of..... is entirely ⟨completely⟩ analogous to..... • We shall also refer to a point as backward nonsingular, with the obvious analogous meaning. • Using (2) and following steps analogous to those above, we obtain.....

**analogously** [to sth] The lower limit is defined analogously: simply interchange sup and inf in (1). • The notion of backward complete is defined analogously by exchanging the roles of $f$ and $f^{-1}$. • This case is treated analogously to the previous one. • Analogously to Theorem 2, we may also characterize.....

**analogue** [of sth; to sth; *amer.* analog] This is an exact analogue of Theorem 1 for closed maps. • No analogue of such a metric appears to be available for $Z$. • Fullness is the analogue in this setting to being an ultrafilter.

**analogy** Let us see what such a formula might look like, by analogy with Fourier series. • In analogy with (1) we have..... • There is a close analogy between..... • The analogy with statistical mechanics would suggest..... • Our presentation is therefore organized in such a way that the analogies between the concepts of topological space and continuous function, on the one hand, and of measurable space and measurable function, on the other, are strongly emphasized. • Our study of the descent properties of stacks bears a close analogy with motivic homotopy theory.

**analyse** [*see also*: examine] A model for analysing rank data obtained from several observers is proposed. • We are able to surmount this obstacle by analysing the rate of convergence.

**analysis** [*see also*: exploration, investigation, study] The only case requiring further analysis occurs when $f = 0$. • We now transfer the above analysis back to $M(A)$. • The analysis is similar to that of [3]. • Analysis of the proofs of these previous results shows that..... • These results show that an analysis purely at the level of functions cannot be useful for describing..... • a careful ⟨close/comprehensive/detailed/systematic/thorough⟩ analysis

**and** It seems that the relations between these concepts emerge most clearly when the setting is quite abstract, and this (rather than a desire for mere generality) motivates our approach to the subject. • It simplifies the argument, and causes no loss of generality, to assume..... • Thus the paper is intended to be accessible both to logicians and to topologists. • If one thinks of $x, y$ as space variables and of $z$ as time, then..... • He would like to express his appreciation to the faculty and staff of the Dartmouth mathematics department for their hospitality. • We need to check that $F$-derivatives behave in the way we expect with regard to sums, scalar multiples and products. • Thus $A$ can be written as a sum of functions built up from $B$, $C$, and $D$. [Putting a comma before the *and* preceding the third object is standard in American usage.]

**angle** Draw the half-line from $x$ at angle $\phi$ to $\theta$. • The line $T$ makes a right angle with the chosen direction. • Then $F$ and $G$ make angle $\alpha$. • Let $ABC$ be an angle of sixty degrees. • The two lines intersect at an angle of ninety degrees. • As the point $z$ moves around the unit circle, the corresponding $J_z$'s are rotations of angle $t(z)$.

**announce** Kim announces that (by a tedious proof) the upper bound can be reduced to 10.

**anomalous** The prime 2 is anomalous in this respect, in that the only edge from 2 passes through 3.

**another** Another group of importance in physics is $SL_2(R)$. • In the next section we introduce yet another formulation of the problem. • It has some basic properties in common with another most important class of functions, namely, the continuous ones. • We have thus found another three solutions of (5). [= three more] • Here the interesting questions are not about individual examples, but about the asymptotic behaviour of the set of examples as one or another of the invariants (such as the genus) goes to infinity. • Then one $Y_i$ can intersect another only in one point. • It is highly likely that if one of the $X$'s is exchanged for another, the inequality fails.

**answer** **1** [to sth; *see also*: explanation, solution] An affirmative answer is given to the question of [3] whether..... • When $A$ is commutative, the answer to both questions is "yes". • The algorithm returns 0 as its answer. • The answer depends on how broadly or narrowly the term "matrix method" is defined. • The answer is not known to us. • What is the answer if $a = 0$?
**2** In the remainder of this section we shall be trying to answer the question:..... • This question was answered negatively in [5]. • The two questions listed below remain unanswered. • As an application of Theorem A, in Section 2 we settle a question left unanswered in [3].

**any** [*see also*: arbitrary, all, each, every, whatever] By deleting the intervals containing $x$, if any, we obtain..... • There are few, if any, other significant classes of processes for which such precise information is available. • Let $Q$ denote the set of positive definite forms (including imprimitive ones, if there are any). • The preceding definitions can of course equally well be made with any field whatsoever in place of the complex field. • If $K$ is now any compact subset of $H$, then there exists..... • Note that $F(t)$ may only be defined a.e.; choose any one determination in (7). • Among all bases $\{a_1, \dots, a_n\}$ for $W$, any one that minimizes the product $|a_1| \dots |a_n|$ is called a *reduced basis.* • Note that any, but not all, of the sets $\alpha h^{-1}$ and $\beta g^{-1}$ can be empty. • for any two triples [NOT "for every two triples"; "every" requires a singular noun.]

**anyway** Here we do not need to exclude the $n = 1$ case, because $G$ is empty anyway.

**apart** [from sth; *see also*: besides, except, distinguish] Apart from these two lemmas, we make no use of the results of [4]. • That is—apart from the use of relaxed controls—precisely the stochastic Bellman equation. • Apart from being very involved, the proof requires the use of..... • There is a curve lying entirely in the open strip $0 < \sigma < 1$ apart from the endpoints such that..... • for no $x$ apart from the unique solution of..... • [Note the difference between *besides*, *except* and *apart from*: *besides* usually indicates "adding" something, *except* "subtracts", and *apart from* can be used in both senses; after *no*, *nothing* etc., all three can be used.] • Their centres are a distance at least $N$ apart. • The $m$ points $x_1, \ldots, x_m$ are regularly spaced $t$ units apart. • What sets the case $n = 5$ apart is the fact that homotopic embeddings in a 5-manifold need not be isotopic.

**apparatus** Keller, in his fundamental paper [7] concerning duality, develops an apparatus that allows him to obtain a very wide variety of duality theorems.

**apparent** [*see also*: clear, evident, obvious, plain] If one studies the proof of..... it is apparent that (2) is never used. • It is now apparent what the solution for $K$ will be like:..... • This is usually called the area theorem, for reasons that will become apparent in the proof. • This formula makes it apparent that only the values $u(d)$ for positive $d$ are relevant. • We shall see in Example 2 that an apparent generalization of the above result to the case where $E$ is a $p$-space is not necessarily true.

**apparently** [*see also*: seemingly] Fox has apparently [= as one can see] overlooked the case of..... • Note that the apparently [= seemingly] infinite product in the denominator is in fact finite. • The reader may wonder why we have apparently ignored the possibility of obtaining a better lower bound by considering.....

**appeal** **1** [*see also*: recourse] Recently proofs have been constructed which make no appeal to integration. • In the preceding proof, the appeal to the dominated convergence theorem may seem to be illegitimate since..... • Through an appeal to (5.3) we have.....
**2** [*see also*: invoke, refer] At this stage we appeal to Theorem 2 to deduce that..... • We can also appeal to Lemma 5 to see that the uniform continuity condition (5.3) is met. • If $s_0$ lies below $R_{-2}$, then we can reflect about the real axis and appeal to the case just considered. • One of the appealing aspects of the spectral set $\gamma$ is that it readily lends itself to explicit computation.

**appear** [*see also*: look, occur, seem, turn out, turn up, look] However, no extension in this direction has appeared in the literature. • The statement does appear in [3] but there is a simple gap in the sketch of proof supplied. • It will eventually appear that the results are much more satisfactory than one might expect. • The zeros appear at intervals of $2m$. • Every prime in the factorization appears to an even power. • No analogue of such a metric appears to be available for $Z$. • Conditions relating to bounds on the eigenvalues appear to be rare in the literature. • At first glance, this appears to be a strange definition. [= seems to be] • Both theorems appear to be folklore—see Cowling [11]—but we have been unable to track down complete proofs. • Neighbourhoods of points in these spaces appear at first glance to have a nice regular structure, but upon closer scrutiny, one sees that many neighbourhoods contain collections of arcs hopelessly folded up. • This may appear rather wasteful, especially when $n$ is close to $m$, but these terms only give a small contribution to our sum. • This conjecture also appears intractable at present. • It does not appear feasible to adapt the methods of this paper to.....

**appearance** The only additional feature is the appearance of a factor of 2. • This convention simplifies the appearance of results such as the inversion formula.

**append** In general we will append a prime to objects if they refer to $[\ ]'$.

**applicability** The abstract theory gives us a tool of much wider applicability.

**applicable** [to sth] We now provide a bound applicable to systems of..... • The hypothesis $n > 1$ ensures that Lemma 2 is applicable.

**application** [*see also*: means, use, via] Repeated application of (4) shows that..... • As an example of the application of Theorem 5, suppose..... • Even in the case $n = 2$, the application of Theorem 6 gives essentially nothing better than the inequality..... • Specifically, one might hope that a clever application of something like Choquet's theorem would yield the desired conclusion. • A drawback to Pólya trees, and perhaps the main reason why they have not seen much application within the Bayesian nonparametric literature, is that an arbitrary partition tree needs to be specified. • As an application, consider the Dirichlet problem $Lf = 0$. • We then show how this leads to stronger results in applications. • [Do not use "application" when you mean "map": a map $f : X \to Y$ (NOT "an application $f$").]

**apply** [to sth; sth to sth; sth to do sth; *see also*: employ, use, utilize, pertinent, relevant] Now (5) follows from (4) if (2) is applied to the last equation. • We now apply the previous observation to estimate $F$. • We apply this to $g$ to obtain..... • In particular, the theorem applies to weakly confluent maps. • We finish by mentioning that, suitably modified, the results of Section 2 apply to the $AP$ case. • More generally this argument also applies to characterizing Hurewicz subsets of $I$. • Then the same argument as in Theorem 5 applies to show that $L(R)$ fails to be amenable. • Actually, [3, Theorem 2] does not apply exactly as stated, but its proof does.

**appreciation** He would like to express his appreciation to the faculty and staff of the Dartmouth mathematics department for their hospitality.

**approach** **1** [to sth; to doing sth; *see also*: method, technique, procedure, way, line] We take the same approach as in [3]. • We could have adopted an approach to proving Theorem 2 along a line of reasoning which bears greater resemblance to the treatment of the analogous result in Section 1. • Very recently, Heck introduced a general approach that unifies and extends all these results. • The case $a = 1$ requires a different approach. • In this paper, we develop a new approach that is intermediate between these two extremes. • It seems that the relations between these concepts emerge most clearly when the setting is quite abstract, and this (rather than a desire for mere generality) motivates our approach to the subject. • We sketch below one possible approach to obtaining such refinements. • The novelty of our approach lies in using..... • It is important to notice some of the weaknesses inherent in the above approach. • The approach in [GT] provides a unified way of treating a wide variety of seemingly disparate examples. • Each approach has its own merits. • The most direct way is to take the $\pi_n$ to be Nielsen-inequivalent choices of generating sets, but this approach is fraught with [= full of] technical difficulties. • a conventional ⟨alternative/novel/systematic/positive/indirect/informal⟩ approach
**2** [*see also*: converge, tend] In the study of infinite series $\sum a_n$ it is of significance whether the $a_n$ approach zero rapidly.

**appropriate** [*see also*: suitable, convenient, good, fit, correspond] Theorems 3 and 6 of [2], with the appropriate changes, are also valid. • By writing out the appropriate equations, we see that this is equivalent to..... • Perhaps it is appropriate at this point to note that a representing measure is countably additive if and only if..... • It seems appropriate to mention in passing the corresponding formula for the cohomology of $B_n$. • It is appropriate to highlight McCann's 1994 contribution. • We assume that $Y$ is a homology sphere or, where appropriate, a disjoint union of homolgy spheres. • ....., where $\delta^1$ denotes the $DD$ bimodule operation on $X$ or $Y$ as appropriate.

**appropriately** [*see also*: conveniently, suitably] Now choose $t$ appropriately as a function of $\varepsilon$. • If $A$ is such an operator (appropriately chosen) then..... • Suppose that $S$ is an (appropriately normalized) positive current on $M$.

**approximate** **1** an approximate solution
**2** It is therefore reasonable that the behaviour of $p$ should in some rough sense approximate the behaviour of $q$. • Here $Y$ is a Poisson variable suitably chosen to approximate $X$ in distribution. • a sequence of smooth domains that approximates $D$ from within

**approximately** [*see also*: roughly, about] Then $x \in R_j$ for some $j$ which is approximately equal to $m + k$. • When we pass from $T$ to $T + \delta$, $f(z)$ changes by approximately $M$. • in the ratio of approximately 3 : 1

**arbitrarily** The quantities $F$ and $G$ differ by an arbitrarily small amount. [NOT "arbitrary small"] • .....where $C$ can be made arbitrarily small by taking..... • Runge's theorem will now be used to prove that meromorphic functions can be constructed with arbitrarily preassigned poles.

**arbitrary** [*see also*: all, each, every, whatever, whichever] This enables us to define solution trajectories $x(t)$ for arbitrary $t$. • The theorem indicates that arbitrary multipliers are much harder to handle than those in $M(A)$. • One cannot in general let $A$ be an arbitrary substructure of $B$ here. • If $X$ happens to be complete, we can define $f$ on $E$ in a perfectly arbitrary manner.

**area** [*see also*: field] The region $A$ has an area of 15 m$^2$. • This is an interesting area for future research. • This is an area where there is currently a lot of activity.

**argue** [*see also*: assert, claim, reason] To see that $A = B$ we argue as follows. • But if we argue as in (5), we run into the integral....., which is meaningless as it stands. • Arguing by duality we obtain..... • It might be argued that the $h$-principle gives the most natural approach to..... • We will argue that $K$ must have maximum rank. Suppose not, meaning that $b(K) < n$.

**argument** [*see also*: reasoning] A similar argument holds for the other cases. • A deformation retract argument completes the proof. • In outline, the argument follows that of the single-valued setting, but there are several significant issues that must be addressed in the $n$-valued case. • This argument comes from [4]. • This argument is invalid for several reasons. • However, this argument is fallacious, because as remarked after Lemma 3,..... • By an elementary argument,..... • This is handled by a direct case-by-case argument. • The inhomogeneous case follows with minimal change to the argument. • Following the argument in [3], set..... • The case $f = 1$ requires a different argument. • But the $T_n$ need not be contractions in $L^1$, which is the main obstruction to applying standard arguments for densities. • We give the argument when $I = R$. • When we make an argument which works in every model, we simply refer to $B$-categories. • Continuity then finishes off the argument. • This completes our argument for (1). • This assumption enables us to push through the same arguments. • It simplifies the argument, and causes no loss of generality, to assume.....

**arise** [*see also*: emerge, occur, result] ....., the last equality arising from (8). • This case arises when..... • The question arises whether..... • A further complication arises from 'BP', which works rather differently from the other labels. • If no confusion can arise, we write $K$ for both the operator and its kernel.

**around** The Laurent expansion of $f$ around ⟨about⟩ zero is..... • To get around this delicate issue, we shall separate the variables $s$ and $u$. • To get around ⟨overcome⟩ this difficulty, assume..... • As the point $z$ moves around the unit circle, the corresponding $J_z$'s are rotations of angle $t(z)$.

**arrange** [*see also*: order, organize] We wish to arrange that $f$ be as smooth as possible. • We can arrange the $X_i$'s to include every element of $F$. • Let $(a_n)$ be the sequence of zeros of $f$ arranged so that $|a_1| \leq |a_2| \leq$..... • The present proof is so arranged that it applies without change to holomorphic functions of several variables.

**arrangement** [*see also*: order, organization] Since most of the results presented are quite classical (the novelty lies in the arrangement, and some of the proofs are new), I have not attempted to document the source of every item.

**arrive** [at sth; *see also*: reach] Setting $f = 0$, we arrive at a contradiction.

**arrow** Combining this with the attaching map defined above, we obtain the commutative diagram..... where surjectivity of the top-left arrow follows from the fact that.....

**article** [*see also*: paper] We close this article by addressing, in part, the case of what happens if we replace the map $T$ by convolution. • We can now formulate the problem to which the rest of this article is dedicated.

**artificial** Although the definition may seem artificial, it is actually very much in the spirit of Darbo's old argument in [5].

**as** [*see also*: like, since] If $f$ is as in (8), then..... [NOT "like in (8)"] • We can multiply two elements of $E$ by concatenating paths, much as in the definition of the fundamental group. • ....., where each function $g$ is as specified ⟨described⟩ above. • Actually, [3, Theorem 2] does not apply exactly as stated, but its proof does. • They were defined directly by Lax [2], essentially as we have defined them. • For $k = 2$ the count remains as is. • In the case where $A$ is commutative, as it will be in most of this paper, we have..... • As a first step we identify the image of $\Delta$. • Then $F$ has $T$ as its natural boundary. • The algorithm returns 0 as its answer. • Now $X$ can be taken as coordinate variable on $M$. • If one thinks of $x, y$ as space variables and of $z$ as time, then..... • Then $G$ is a group with composition as group operation. • We have $A \equiv B$ as right modules. • Then $E$ is irreducible as an $L$-module. • As mentioned in §1, we must impose some condition on $T$. • ....., as is easily verified. • ....., as noted ⟨as was noted⟩ in Section 2. [NOT "as it was noted"] • ....., as desired ⟨claimed/required⟩. • The elements of $F$ are not in $S$, as they are in the proof of..... • Note that $F$ is only nonnegative rather than strictly positive, as one may have expected. • Then $G$ has 10 normal subgroups and as many nonnormal ones. • Moreover, $H$ is a free $R$-module on as many generators as there are path components of $X$. • But $A$ has three times as many elements as $B$ has. • We can assume that $p$ is as close to $q$ as is necessary for the following proof to work. • Then $F$ can be as great as 16. • Each tree is about two-thirds as deep as it was before. • As $M$ is ordered, we have no difficulty in assigning a meaning to

$(a, b)$. • The ordered pair $(a, b)$ can be chosen in 16 ways so as not to be a multiple of $(c, d)$. • Now (3) is clear. As for (4), it is an immediate consequence of Lemma 6. [= Concerning (4)] • As with the digit sums, we can use alternating digit sums to prove..... [= Just as in the case of digit sums] • As of this writing, the authors have no example of a monotone self-map of the Pontryagin surface with absolute degree greater than one.

**aside** [*see also*: way, pass, incidentally] As an aside, we remark that this formula can be used for efficient explicit computation of certain kinds of Fourier coefficients.

**ask** In this section we ask about the extent to which $F$ is invertible. • Thus it is entirely natural to ask about the properties of $E(AB)$. • This is the same as asking which row vectors in $R$ have differing entries at positions $i$ and $j$. • An obvious question to ask is whether the assertion of Theorem 1 continues to hold for..... • The assumption of Theorem 3 asks that a weaker form of this property hold not only for norms, but also for distance. [Note the subjunctive *hold.*]

**aspect** [*see also*: detail, feature, characteristic, ingredient, point] One of the appealing aspects of the spectral set $\gamma$ is that it readily lends itself to explicit computation. • I shall limit myself to three aspects of the subject. • We shall touch only a few aspects of the theory. • a central ⟨crucial/fundamental/key/main/major/principal/fascinating/striking/neglected⟩ aspect

**assert** [*see also*: say, state] The spectral radius formula asserts that..... • Puiseux's theorem asserts the existence of..... • We also need the following technical lemma, which asserts the rarity of numbers with an inordinately large number of prime factors. • Here is a more explicit statement of what the theorem asserts. • It should be noted that we are not yet in a position to assert the finiteness of either of these numbers. • To prove the asserted convergence result, first note that.....

**assertion** [*see also*: conclusion, statement] Now (2) is clearly equivalent to the assertion that..... • ....., which proves the assertion. [NOT "the thesis"] • If we prove (8), the assertion follows. • The interest of the lemma is in the assertion that..... • Assertion (b) is known as the Radon-Nikodym theorem.

**assess** [*see also*: estimate] To assess the quality of this lower bound, we consider the following special case.

**assign** [*see also*: associate] The map $f$ assigns to each $x$ the unique solution of..... • As $M$ is ordered, we have no difficulty in assigning a meaning to $(a, b)$. • A weighted graph is one in which each vertex is assigned an integer (called its weight). • Here the variable $h$ is assigned degree 1.

**assignment** The assignment of $K_1$ to $K$, and of $T_1$ to $T$, defines a functor between the category of commutative algebras and the category of compact semigroups with continuous homomorphisms.

**associate** [sth with/to sth; *see also*: assign, connect, link, relate, join] With each $D$ there is associated a region $V_D$. • Associated with each Steiner system is its automorphism group, that is, the set of all..... • We are pleased to be able to offer this simple version of a technique which has hitherto been associated primarily with finite simple groups. • Generally we add a tilde to distinguish between quantities associated to $\tilde{G}$ and those associated to $G$. • Let $l$ be an eigenvalue of $A$, and let $v$ be an associated eigenvector.

**assume** [*see also*: suppose, presume] We can assume, by decreasing $n$ if necessary, that..... • We may (and do) assume that..... • We tacitly assume that..... • It is assumed that..... • We follow Kato [3] in assuming that $f$ is upper semicontinuous. • Here $F$ is assumed to be open. • ....., the limit being assumed to exist for every real $x$. • The assumed positivity of $u_n$ is essential for these results. • The reader is assumed to be familiar with elementary $K$-theory. • Then $X$ assumes values $0, 1, ..., 9$, each with probability $1/10$.

**assumption** [*see also*: condition, hypothesis, requirement] We make two standing assumptions on the maps under consideration. • We can put a simplifying assumption on the grading set of the $DD$ bimodule. • By the smoothness assumption on $f$,..... • Because $I$ is by assumption finite on $A$, it follows from (3) that..... • If the boundary is never hit then $x_t$ is a Feller process under reasonable continuity assumptions. • We establish our results both unconditionally and on the assumption of the Riemann Hypothesis. • We note that the assumption of GCH is made for convenience and ease of presentation. • Then $F$ is continuous at zero, contrary to assumption. • a basic ⟨fundamental/implicit/tacit/underlying/reasonable/erroneous⟩ assumption

**at** At the fourth comparison we have a mismatch. • The match occurs at position 7 in $T$. • Now $R$ is the localization of $Q$ at a maximal ideal. • Next, $F$ preserves angles at each point of $U$. • We may assume that this is the first point at which these two curves have met. • In the proof of Theorem 5 we made use (at (8)) of the fact that..... • at the end of Section 2 • Now $F$ is defined to make $G$ and $H$ match up at the left end of $I$. • The zeros appear at intervals of $2m$. • The two lines intersect at an angle of ninety degrees. • We can make $g$ Lipschitz at the price of weakening condition (i). • At the suggestion of the referee, we consider some simple cases. •

**attach** The name of Harald Bohr is attached to $bG$ in recognition of his work on almost periodic functions.

**attack** The sort of problem which we are attacking has, on the face of it, nothing to do with differential algebra. [When first considered, it seems to be unrelated to differential algebra.]

**attain** [*see also*: achieve, reach, take] Equality is attained only for $a = 1$. • The function $g$ attains its maximum at $x = 5$. • Now (c) asserts only that the overall maximum of $f$ on $U$ is attained at some point of the boundary.

**attempt** **1** [at sth; at doing sth; to do sth; *see also*: trial] This work was intended as an attempt to motivate ⟨at motivating⟩..... • There are other problems with this example which would hinder any attempt to follow the proof given here too closely. • Among the attempts made in this direction, the most notable ones were due to Jordan and Borel. • This attempt is doomed because the homogeneity condition fails to hold. [= The attempt is certain to fail] • Having established (1), one might be tempted to try to extend this result to general $p$ through the choice of a suitable ideal $B$. Alas, as we shall see now, this attempt is futile. • a successful ⟨unsuccessful/failed/serious/repeated⟩ attempt

**2** [sth; to do sth; *see also*: try] In 1988, while attempting to generalize this result, the second author noticed that..... • Since most of the results presented are quite classical (the novelty lies in the arrangement, and some of the proofs are new), I have not attempted to document the source of every item. • Thus it is reasonable to attempt, using this homeomorphism, to gain an understanding of the structure of $M$.

**attention** It is a pleasure to thank R. Greenberg for bringing his criterion for..... to our attention, and for generously sharing his ideas about it. • We now turn our attention to..... • We can do this by restricting attention to..... • In this section I shall focus attention on..... • From now on we confine attention to $R^2$. • Incidentally, the question of whether $K(E)$ is amenable for specific Banach spaces $E$ seems to have received almost no attention in the literature. • The reason for our attention to these questions, beyond their intrinsic interest, is that, in certain circumstances, they provide a way to prove unique ergodicity results for groups.

**attribute** This heuristic argument has been attributed to Sarnak [B].

**author** The author thanks H. Miller for a careful reading of an earlier draft. • This observation prompted the author to look for a more constructive solution. • The above construction has led the author to believe that..... • The author's interest in this problem was recently rekindled by a conversation with David Lees. • To the best of the author's knowledge, the problem is still open. • The only references known to the authors are [A] and [V], where the case $A = L(E)$ is settled in the negative. • In 1988, while attempting to generalize this result, the second author noticed that..... • The paper was commenced whilst the second author held a Fullbright Fellowship. • Our first result generalizes (8) by exploiting some general facts seemingly overlooked by the aforementioned authors. • This topic has been dealt with by many authors. • A number of authors have considered, in varying degrees of generality, the problem of determining.....

**automatic** An $i$-dependent lower bound is automatic by continuity.

**automatically** Note that $f = \lim f_n$ automatically exists.

**auxiliary** In Section 2 the reader will be reminded of some important properties of Bernoulli numbers, and some auxiliary results will be quoted or derived.

**available** No analogue of such a metric appears to be available for $Z$. • A further tool available is the following classical result of Chen.

**average** **1** The observed values of $X$ will on average cluster around points where..... [NOT "in average"] • How many multiplications are done on average?

**2** $P$ rides a cycle at an average speed of 20 km an hour. • The earth has an average density 5.5 times that of water. • Between 1929 and 1975 Australian income per person increased at an average annual rate of 0.96%.

**3** The measure $\mu$ is then obtained by averaging the standard measures over all choices of.....

**avoid** [sth; doing sth; *see also*: miss] We should avoid using (2) here, since..... [NOT "avoid to use"] • The contemporary usage avoids passing to a Lévy collapse extension at the expense of stronger large cardinal hypotheses. • However, we prefer to avoid this issue altogether by neglecting the contribution of $B$ to $S$. • To avoid undue repetition in the statements of our theorems, we adopt the following convention. • They defined the concept solely in terms of the norm of the Banach space, deliberately avoiding any extra structure. • This example indicates that the inductive argument in the proof of Theorem 1 is unavoidable.

**await** Nevertheless we still await a full characterization of the Banach spaces $E$ such that $K(E)$ is amenable.

**aware** [*see also*: know] At the time of writing [5], I was not aware of this reference. • One must also be aware that the curvature of $M_i$ might not be bounded uniformly in $i$. • As far as we are aware, there is no proof in print. • In 1925 Franklin, unaware of Stackel's work, showed.....

**away** [*see also*: beyond, off, outside, distance] Then $F$ is smooth away ⟨bounded away⟩ from zero. • Away from critical points, the action of $G$ is reminiscent of the action of a cyclic group of order $d$. • If we keep $x$ away from $\partial D$ by restricting it to a compact set $K \subset D$, then..... • It follows that $z$ is at least $2MN$ away from the left endpoint of $I$.

## B

**back** Back to the proof of Theorem 1, note that..... • A linear transformation brings ⟨takes⟩ us back to the case in which..... • The solutions can be carried back to $H(V)$ with the aid of the mapping function $\phi$. • .....(a result that dates back to a 1915 paper of Hadamard) • This idea goes back at least as far as [3]. • This argument goes back to Banach. • Schenzel's formula frequently allows us to move back and forth between the commutative algebra of $k[P]$ and the combinatorics of $P$. • ....., which when plugged back into (4) yields the desired conclusion. • Retracing the steps back to the original $u_m$, we see that..... • This idea can be traced back to an 1882 paper of Klein. • We now transfer the above analysis back to $M(A)$. • We now turn back to our main question.

**background** For background information, see [5]. • For relevant background material concerning random walks, see [2]. • See [5, Section 3], for example, for background on $(p, q)$-summing operators. • In Section 2, we review the relevant algebraic background from bordered Floer homology. • Section 2 contains an overview of the necessary background.

**backward(s)** We shall also refer to a point as backward nonsingular, with the obvious analogous meaning. • The notion of backward complete is defined analogously by exchanging the roles of $f$ and $f^{-1}$. • Extend this sequence of numbers backwards, defining $N_{-1}$, $N_{-2}$ and $N_{-3}$ by..... • Then $G$ is simply $g$ with its periodic string read backwards. • Let $A'$ be $A$ run backwards. • [In most adverbial uses, *backward* and *backwards* are interchangeable; as an adjective, the more standard form is *backward*: *a backward shift.*]

**badly** However, this metric does not define a group topology, because group multiplication fails badly to be continuous.

**ball** a ball of radius $r$ about the origin • the ball of radius $r$ centred at $x$ ⟨with centre at $x$⟩

**base** **1** [*see also*: basis] the base $p$ expansion ⟨representation⟩ of $x$ • From now on all logarithms are to base two. • Take as base for a topology on $X$ the sets of the form..... • For the base step of the induction, consider a vertex $t$ in $A$.
**2** [*see also*: depend, rest, rely, build] Our proof of Theorem 2 is based upon ideas found in [BN]. • We base our development on two properties of prolongation peculiar to this case. • For our purposes here, the best way is to base the proof on the following theorem, a derivation of which can be found in [P]. • The fact that such a bias has been observed experimentally is further evidence that the methodology of basing conclusions on the distribution of $P$ is reasonable. • For convenience, we briefly summarize a convenient way of constructing homotopy equivalences between $DD$ bimodules and between $DA$ bimodules, based on homological perturbation theory.

**basic** [*see also*: crucial, essential, critical, main, key] On the other hand, as yet, we have not taken advantage of the basic property enjoyed by $S$: it is a simplex. • We presume a basic knowledge of large cardinals and forcing. • The basic problem of interest is to derive the asymptotics of the number $N_T(P, E)$ of circles in the packing $P$ which intersect a bounded set $E$ and have curvature $< T$.

**basics** [*see also*: rudiments] For the basics on tensor products, see [Da].

**basically** [*see also*: essentially, mainly] As noted in the introduction, this is basically combining Sawyer's result with a variation of the arguments of Hunt.

**basis** [of sth, for sth; *pl.* bases; *see also*: base, foundation, underlie] Theorem 2 will form the basis for our subsequent results. • The conference laid the basis for a series of annual gatherings. • The basis of most of these theorems is Jensen's formula.

**be** [*see also*: being] The theorem to be proved is the following. [= which will be proved] • We conclude with two simple lemmas to be used mainly in..... • One can, for example, take $A$ to be the rationals in $X$. • This assumption is certainly necessary if the distribution of $x_t$ is to converge to $F$. • If there are to be any nontrivial solutions $x$ then any odd prime must satisfy..... • However, as we are about to see, this complication is easily handled.

**bear** An example to bear in mind is behaviour in the basin of a periodic point. • There is a fourth notion of phantom map which bears the same relation to the third definition as the first does to the second. • We could have adopted an approach to proving Theorem 2 along a line of reasoning which bears greater resemblance to the analogous result in Section 1. • All three cases bear a striking resemblance. • This shape bears a striking similarity to that of..... • Our study of the descent properties of stacks bears a close analogy with motivic homotopy theory. • While we suspect that the methods of the present section can be brought to bear on this question also [= be relevant to this question], we will not pursue this analysis in detail here.

**because** [*see also*: as, for, since] However, this argument is fallacious, because as remarked after Lemma 3, $K$ is discontinuous. • This is because the factor $M$ satisfies condition (P). • Unfortunately, because of the possible presence of 'cusps', this need not be true. • Because of this, $W$ is never long enough to cancel with $M$ in the product $ABC$.

**become** Then $F$ becomes inner when extended to $B$. • The conclusion of Theorem 3 becomes false if this requirement is omitted. • When $h$ is in $H$, the integral formula becomes $Af =$..... • It becomes impracticable to compute the zeros of $F$ for degrees greater than 6; in any event, deciding whether the divisors found in this way represent irreducible curves becomes increasingly difficult. • Indeed, as $n$ increases, it becomes increasingly rare for a manifold to be a hyperplane section of another projective manifold.

**before** [*see also*: previously, hitherto] The sum of the depths is at most two-thirds of what it was before. • Each tree is about two-thirds as deep as it was before. • The remainder of the estimation is largely as before with $B$ replaced by $C$. • The proof concludes as before. • This allows the proof of the continuity of $G$ to go through as before. • Most of the theorems presented here have never been published before. • As noted before, there exists $N$ homeomorphic to $P$ such that..... • Note that $P$ comes before $Q$ along the arc $l$. • We may require that the point $P$ lie in one of the trees constructed before or during the $i$th stage of the induction. [Note the subjunctive *lie*.] • Before proceeding, we first note the following observation.

**beforehand** It will be convenient to state beforehand, for easy reference, the following variant of.....

**begin** [with sth; by doing sth; *see also*: proceed, start, commence] We begin by describing the class of functions $f$ considered, which includes the special cases quoted above. • We begin with a detailed analysis of..... • There is quite an extensive literature concerning resonance problems, beginning with the work of Lazer. • To begin, let $A_0$ be the trivial algebra with automorphism $g_0$.

**beginning** [*see also*: initially, originally, first, start, outset] (see the definition at the beginning of Section 2) • In the beginning [= Initially], he suspected that.....

**behave** Note that $C$ behaves covariantly with respect to maps of both $X$ and $G$. • We need to check that $F$-derivatives behave in the way we expect with regard to sums, scalar multiples and products. • Hence we would expect the functions $F_i$ to behave similarly. • For general rings, $\mathrm{Out}(R)$ is not necessarily well-behaved.

**behaviour** [*amer.* behavior] It is therefore reasonable that the behaviour of $p$ should in some rough sense approximate the behaviour of $q$. • Some restrictions must be placed on the behaviour of $f$. • This gives some control over the behaviour of..... • A function exhibiting this type of behaviour has been constructed by..... • This conclusion matches the elliptic curve rank behaviour conjectured by Goldfeld [G]. • We also show the existence of $E$-transformations exhibiting nearly the full range of behaviours possible for scaling transformations.

**behind** The idea behind our use of the map $\sigma$ is that..... • This is the motivation behind the following process.

**being** Note that $M$ being cyclic implies $F$ is cyclic. • The probability of $X$ being rational equals 1/2. • This is exactly our definition of a weight being regulated. • We have to show that the property of there being $x$ and $y$ such that $x < y$ uniquely determines $P$ up to isomorphism. • In addition to $f$ being convex, we require that..... • Here $J$ is defined to equal $Af$, the function $f$ being as in (3). [= where the function $f$ is.....; *not*: "being the function $f$ as in"] • ....., the constant $C$ being independent of..... • The ideal is defined by $m =$....., it being understood that..... • But....., it being impossible to make $A$ and $B$ intersect. [= since it is impossible to make] • The map $F$ being continuous, we can assume that..... • Actually, $S$ has the much stronger property of being convex. • This method has the disadvantage of not being intrinsic. • [Do not write "the function $f$ being the solution of (1)" if you mean *the function $f$ that is the solution of* (1).]

**believe** It is this proposition that we believe to be false in Morava E-theory. • While nonparametric priors are typically difficult to manipulate, we believe the contrary is true for quantile pyramids. • There is no reason to expect this to be an inverse map on $K$, but we do have the following.

**belong** [*see also*: element, member, membership] Lebesgue discovered that a satisfactory theory of integration results if the sets $E_i$ are allowed to belong to a larger class of subsets of the line. • Two consecutive elements do not belong both to $A$ or both to $B$. • It turns out that $A$, $B$ and $C$ all belong to the same class, which we represent by the symbol $P_2$. • For the sake of clarity, we shall indicate in what follows to which space $X$ belongs. • [Do not write "$E$ belongs to the most important classes of algebras" if you mean *$E$ is one of the most important classes of algebras* or *$E$ is among the most important classes of algebras*.]

**below** A brief sketch of the reasoning is given below. • By Remark 3 below,..... • The pressure increases are significantly below those in Table 2. • This proves that the dimension of $S$ does not go below $q$. • a function bounded below ⟨above⟩ by 1 • As a first step we shall bound $A$ below.

**benefit** [*see also*: advantage, merit] **1** The benefit of formulating our notion of 'isomorphism section' as above will become clear shortly. • For the benefit of Pascal programmers, we explain..... • Although our proof is a little tedious, it is much less so than Ito's original proof, which was carried out without the benefit of martingale technology.
**2** In doing this we will also benefit from having the following notation. • We have benefited greatly from discussions with many people, including.....

**besides** [*see also*: apart from, except] Besides being very involved, the proof requires the use..... • Besides their possible role in physics, the octonions are important because they tie together some algebraic structures that otherwise appear as isolated and inexplicable exceptions. • for no $x$ besides the unique solution of..... • [Note the difference between *besides*, *except* and *apart from*: *besides* usually "adds" something, *except* "subtracts", and *apart from* can be used in both senses; after *no*, *nothing* etc., all three can be used.] • [Do not write "Besides, the solution is given by (5)" if you just mean *Moreover, the solution is given by* (5). You can use *besides* to introduce a side remark (though maybe important): *We omit the proof; besides, the same formula already appears in [7], albeit in a different context.*]

**best** It is best not to use..... • The best one could hope for is $K \geq F$. • This result is best possible. [OR the best possible] • In Theorem 2 we show that the bound is not far from best possible. • The above bound on $a_n$ is close to best possible. • The best known of these is the Knaster continuum. • This is best described in terms of the group $G(M)$. • It can be inferred from known results that these series at best converge conditionally in $L^p$.

**better** [*see also*: improve, improvement] Recent improvements in the HL-method enable us to do better than this. • In fact, we can do even better, and prescribe finitely many derivatives at each point of $A$. • Even in the case $n = 2$, the application of Theorem 6 gives essentially nothing better than the inequality.....

**between** [*see also*: among] There cannot be two edges between one pair of vertices. • Generally we add a tilde to distinguish between quantities associated with $\tilde{G}$ and those associated with $G$. • It seems that the relations between these concepts emerge most clearly when the setting is quite abstract, and this (rather than a desire for mere generality) motivates our approach to the subject. • The assignment of $K_1$ to $K$, and of $T_1$ to $T$, defines a functor between the category of commutative algebras and the category of compact semigroups with continuous homomorphisms. • The three sets have 25 elements between them. [= in total]

**beware** [*see also*: caution, watch] Beware that the pro-objects of [Me] are indexed by categories that are not necessarily small. • Beware that more than one equation is referred to as the fast diffusion equation in the literature.

**beyond** [*see also*: away, off, outside] We would like to know....., but that is beyond our reach at this point. • It is beyond the scope of this paper to give a complete treatment of..... • Inflation in the first quarter rose beyond the acceptable level of 5%. • The reason for our attention to these questions, beyond their intrinsic interest, is that, in certain circumstances, they provide a way to prove unique ergodicity results for groups.

**body** We refer the reader to the body of the paper for details. [= to the main part of the paper] • The present article is an updated version of our work [D], the main body of which was first posted to the arXiv in 2013. • They are also central to a body of work on nonabelian cohomology. [= to a group of papers]

**borrow** We summarize some of its main properties, borrowing from the elegant discussion in Henson's article.

**both** [*see also*: either, neither] Both $f$ and $g$ are obtained by..... [OR $f$ and $g$ are both obtained] • For both $C^\infty$ and analytic categories,..... • Here $C$ behaves covariantly with respect to maps of both $X$ and $G$. • We now apply (3) to both sides of (6). • Both conditions ⟨Both these conditions/Both the conditions⟩ are restrictions only on..... [*Note*: *the* etc. after *both.*] • Then $C$ lies on no segment both of whose endpoints lie in $K$. • Two consecutive elements do not belong both to $A$ or both to $B$. • [Do not write "Both $X$ and $Y$ are not convex" if you mean *Neither $X$ nor $Y$ is convex.* If *both* refers to the subject, the statement must be affirmative. Note, however, that you may circumvent that by writing *Both $X$ and $Y$ are nonconvex.*] Both its sides are convex. [OR Its sides are both convex.] • Here $B$ and $C$ are nonnegative numbers, not both 0. • Choose points $x$ in $M$ and $y$ in $N$, both close to $z$, such that..... • We show how this method works in two cases. In both, $C$ is.....

**bottom** [*see also*: low, top] Number the successive segments of the boundary line between $A$ and $B$ (marked thickly in the picture) with the numbers $0, 1, ..., n$, starting at the bottom. • The matrix $A$ has an $n \times m$ block of zeros in the bottom left-hand corner.

**bound** **1** [*see also*: estimate] The above bound on $a_n$ is close to best possible ⟨to the best possible⟩. • We conclude that, no matter what the class of $b$ is, we have an upper bound on ⟨for⟩ $M$. • The main new feature is the use of the face ring to produce lower bounds for the number of vertices. • Kim announces that (by a tedious proof) the upper bound can be reduced to 10.

**2** [*see also*: dominate, estimate] $F$ is bounded above ⟨below⟩ by a constant times $f(z)$. • To show that $\gamma_2(T)$ is upper bounded by the expected supremum of the Gaussian process, the proof of Theorem 5 constructs nets $T_n$ by means of a greedy partitioning scheme that uses the Gaussian process itself. • Then $G$ is bounded away from zero. • Theorem 1 can be used to bound the number of such $T$.

**boundary** Then $F$ has $T$ as its natural boundary.

**bracket** The first integral inside the brackets on the last line is $EX$. • the expression in brackets ⟨in braces, in parentheses⟩ • the first bracketed term on the right of (6)

**break** [*see also*: decompose, split] The remainder of our work breaks into five steps. • In this case the method of [4] breaks down. • Then the sequence (8) breaks off in split exact sequences. • Thus the long exact sequence breaks up into short sequences. • We break up the Mertens sum as in (3).

**breakthrough** Indeed, it is unlikely that one could improve this condition without making an analogous breakthrough in Waring's problem. • A recent breakthrough of Moreira [M] resolves a longstanding conjecture of Hindman H], proving partition regularity of the equation $x+y^2 = yz$.

**brevity** [*see also*: short, shorthand] For brevity, we drop the subscript $t$ on $h_t$. [NOT "For shortness"]

**brief** [*see also*: concise, succinct] We conclude with a brief mention of free inverse semigroups. • We now turn to a brief discussion of another concept which is relevant to John's theorem. • In brief outline, here is the main idea of the proof. • We shall be brief here and just estimate the terms that are the most challenging. • Having illustrated our method in Section 2, we can afford to be brief in our proof of Theorem 5.

**briefly** [≠ shortly] We denote it briefly by $c$. [NOT "shortly"] • To see this connection, we need to explain briefly the method by which universal minimal flows are calculated in [KPT]. • We briefly outline this refinement at the end of Section 2. [NOT "in the end"] • The proof will only be indicated briefly. • There has since been a series of improvements, of which we briefly mention the work of Levinson.

**bring** We must now bring dependence on $d$ into the arguments of [9]. • The map $F$ can be brought into this form by setting..... • Bruck's theorem on common fixed points for commuting nonexpansive mappings is then brought into play by noting that..... • Mary Lane deserves our special thanks for her part in bringing this volume to a successful completion. • It is a pleasure to thank R. Greenberg for bringing his criterion for..... to our attention, and for generously sharing his ideas about it. • This brings about the natural question of whether or not there is any topology on the set of all possible itineraries. • A linear transformation brings us back to the case in which..... • Later, by bringing in the injectivity radius, Fong simplified the argument. • The aim of this paper is to bring together two areas in which..... • These volumes bring together all of R. Bing's published mathematical papers.

**broad** [*see also*: wide] Most of these phenomena can be subsumed under two broad categories. [= included in] • Those results permit us to view this fragment of the theory from a broader perspective.

**broadly** [*see also*: largely] The answer depends on how broadly or narrowly the term 'matrix method' is defined. • The argument follows broadly the same pattern as in Case 1, except that the expression $R(n)$ is useless when $q = 5$ and ineffective when $q = 7$.

**build** [*see also*: base, construct, establish, develop, make] This enables discontinuous derivations to be built. • The assumption that $Q$ is not a torsion point is built into (5). • Kirk, building on work of Penot, developed a more abstract version of..... • Thus $A$ can be written as a sum of functions built up from $B$, $C$, and $D$.

**but** [*see also*: though, although, however, nevertheless, yet] If..... then (1) holds but not (2). • All but a finite number of the $G_s$ are empty. [= all except] • This will be proved by showing that $H$ has but a single orbit on $M$. [= only a single orbit] • However, (ii) is nothing but the statement that..... [= only the statement that]

**by** By continuity ⟨By the continuity⟩ of $f$,..... • By assumption,..... • By the above,..... • By the induction hypothesis,..... • By what we have already proved, $|f|$ must then be of the form..... • Such a $G_0$ exists by (2) when $n \geq k$. • By considering translations, rotations, and reflections separately, it is not hard to see that..... • Consider the class of finite graphs, by which we mean simple graphs, i.e., without loops or multiple edges. • To see this connection, we need to explain briefly the method by which universal minimal flows are calculated in [K]. • If $H$ is an induced subgraph of $G$, then $\mu_G$ induces $\mu_H$ by restriction. • The addition of a single hyperedge to $G$ changes $N(G)$ by at most $k$. • Plugging these into (6) and grouping the elements of $S$ together by type, we can use (16) to deduce that..... • By and large, we shall use the same notation as in..... [= In general] • term-by-term differentiation • a 3 by 4 matrix = a $3 \times 4$ matrix • Thus we need only alter our constants by a factor of 2 to deal with this case. • By *quasi-equation* we understand a sentence of the form..... • The following basic properties of spectral isometries are by now standard (see, e.g., [6]).

**bypass** In order to bypass some technicalities, we also assume that.....

**by-product** [*see also*: incidentally, pass] As a by-product, we obtain an explicit formula for.....

## C

**calculate** [*see also*: compute] Calculating $V$ is an application of Theorem 5. • To see this connection, we need to explain briefly the method by which universal minimal flows are calculated in [KPT]. • It can be easily calculated by hand that the nonzero solutions are..... • To calculate (2), it helps to visualize the $S_n$ as the successive positions in a random walk.

**calculation** [*see also*: computation] The calculation of $M(f)$ is usually no harder than the calculation of $N(f)$. • A short calculation shows that..... • This depends on some heavy calculation with modular forms. • Calculation gives $A = 5$. These upper bounds are too large to be useful in computer calculations in general, but the ideas in the proofs will surely contribute to better bounds in the future. • We can do a heuristic calculation to see what the generator of $x_t$ must be. • These calculations can be performed entirely in terms of the generators of $G$. • By detailed numerical calculation one may show that..... • With some calculation one can prove this makes $K$ into a nicely normed algebra.

**call** [*see also*: name, designate, term, appeal, invoke] A set $D$ is called a *phase diagram* if..... [No comma before *if* here.] • The sequence $a_n$ is what is sometimes called a recovery sequence for $v$. • Call a set a *phase diagram* if..... • Call $H$ the width of $g$. [Note that this phrase defines the last term appearing (width), and $H$ is assumed to be known; cf. *Denote by $H$ the width of $g$*, which defines the notation $H$.] • The lemma motivates our calling $R$ a generalized Picard group. • This corollary calls for some explanation and comment. • We will call on this version of the inverse theorem when we come to our applications in Section 2. • Adding $E$ to both sides of (1), we can call upon (2) to obtain (3).

**can** [*see also*: able, could, may] Using recent work of Agol, one can arrange for $G$ to be the fundamental group of a special cube complex. • There has since been a considerable amount of work exploring the extent to which $G_1$ can differ from $G_2$. • No point of $T$ can be a regular point of $f$. • The first possibility cannot occur, because it would imply that..... • There cannot be two edges between one pair of vertices. • It cannot be that there exists $x \in \Omega \setminus F$, for otherwise $\theta(\delta_x) = \kappa_E(\delta_x) = 0$, which is not the case. • But (1) can be interpreted to mean that.....

**cancel** [*see also*: compensate, offset] Indeed, these edges only contribute to the sets $S_1$ and $S_3$ by assumption, and the contribution to $S_1$ cancels the contribution to $S_3$. • Because of this, $W$ is never long enough to cancel with $M$ in the product $ABC$. • We can immediately use one of these poles to cancel out the effect of the pole at $s = 0$. • Hence the different pieces of the integral, corresponding to different pieces of $M$, cannot cancel each other out.

**capture** The significance of this fact for our purposes is captured by Corollary 3. • The notion of turbulence almost exactly captures the combinatorial content of not being an $S$-action.

**cardinality** a set of cardinality $\omega$ • The set $E$ has the cardinality of the continuum.

**care** [*see also*: caution] This procedure can be extended to take care of any number of terms. • One should take great care with..... • However, (9) needs handling with greater care. • The only point that requires extra care is the verification of..... • Special care needs to be exercised in forming the Cauchy kernel of $G(x)$. • The above definition was first given in [D]; care is required because this term has been used in a slightly different sense elsewhere.

**careful** The author thanks H. Miller for a careful reading of an earlier draft.

**carefully** By carefully examining the relations between the quantities $U_i$, we see that.....

**carry** [*see also*: move, make, perform] This map carries lines to lines ⟨carries $M$ onto $N$⟩. • Each set $A$ carries a product measure. • The solutions can be carried back to $H(V)$ with the aid of the mapping function $\phi$. • The detailed analysis of..... is carried out in Section 2. • In order to carry out the construction, we must make a judicious choice of $P$. • The method of proof carries over to domains satisfying..... • The method sketched in Section 3 of [Con] carries through with our choice of $\psi = \psi_1 + \psi_2$, but there is one extra ingredient worthy of mention.

**case** [*see also*: event, possibility] We first do the case $n = 1$. • This argument also settles the case of $K = \Gamma$. • We finish by mentioning that, suitably modified, the results of Section 2 apply to the $AP$ case. • Note that (4) covers the other cases. • There are several cases to consider:..... • We close this article by addressing, in part, the case of what happens if we replace the map $T$ by convolution. • There are quite a number of cases, but they can be described reasonably systematically. • The general case follows by changing $x$ to $x-a$. • This abstract theory is not in any way more difficult than the special case of the real line. • Important cases are where $S =$..... • This case arises when..... • Both cases can occur. • To deal with the zero characteristic case, let..... • Then either....., or..... In the latter ⟨former⟩ case,..... • In the case of finite additivity, we have..... • In the case of $n \geq 1$ ⟨In case $n \geq 1$⟩,..... [*Better*: If $n \geq 1$ then.....] • In the case where $A$ is commutative, as it will be in most of this paper, we have..... • We shall assume that this is the case. • It cannot be that there exists $x \in \Omega \setminus F$, for otherwise $\theta(\delta_x) = \kappa_E(\delta_x) = 0$, which is not the case. • Unfortunately, this is rarely the case. • However, it need not be the case that $V > W$, as we shall see in the following example. • Such was the case in (8). • The $L^2$ theory has more symmetry than is the case in $L^1$. • Note that some of the $a_n$ may be repeated, in which case $B$ has multiple zeros at those points. • This is handled by a direct case-by-case argument. • We start with a well-known lemma, and then proceed case-by-case depending on the subgroup $G$. • a classic ⟨textbook/typical/borderline/simple/extreme/rare/striking⟩ case • We use upper case letters to represent inverses of generators. [= capital letters]

**category** a set whose complement is first category • a first category set • Define the category $M$ to have as objects pairs of manifolds, and as morphisms..... • The assignment of $K_1$ to $K$, and of $T_1$ to $T$, defines a functor between the category of commutative algebras and the category of compact semigroups with continuous homomorphisms. • The most frequently used models fall into one of the following two categories.

**cause** [sth; sth to do sth; *see also*: result] The hypothesis $f(0) \neq 0$ causes no harm in applications, for if..... • Clearly, there cannot be more than one such $F$, since that would cause $E$ to be non-Hausdorff. • Note that a decrease in $b$ causes $f$ to increase. • [Do not write "This causes that we cannnot apply Lemma 2" if you mean *As a result, we cannot apply Lemma 2.* You cannot use a that-clause after *cause.*]

**caution** [*see also*: beware, care, watch] **1** For measures that are not of finite variation, more caution is required. • Nevertheless, in interpreting this conclusion, caution must be exercised because the number of potential exceptions is huge. • Finally, a word of caution. • We therefore proceed with some caution.
**2** The reader is cautioned that our notation is in conflict with that of [3]. • Those readers familiar with [AB] should be cautioned that many of the definitions for families therein simplify in the case of filters.

**cautious** We remark that we have to be cautious here since $L^\infty(X)$ with the weak-star topology is not a metric space.

**celebrated** [*see also*: famous] By Hilbert's celebrated result, $f$ is a sum of squares.

**centre** [*amer.* center] a ball with centre at $x$ [OR with centre $x$, centred at $x$] • In (3.6), the most favorable case is when $t$ is in the centre of the interval.

**certain** The spectrum of $T$ was defined in [4] and identified with the spectrum of a certain algebra $A_T$. • It seems plausible that..... but we have been able to establish this only in certain cases. • under certain conditions

**certainly** [*see also*: definitely, surely] This is certainly reasonable for Algorithm 3, given its simple loop structure. • Hence both decay exponentially as $x \to \infty$, therefore certainly remain bounded. • As Corollary 2 shows, it is certainly a question deserving further exploration. • Here, of course, the set $A$ produced is rather thin and certainly nowhere near the densities we are looking for.

**challenge** **1** The basic challenge in controlling $\gamma_2(B)$ is to approximate the unit ball of the norm $\|\cdot\|_B$ in terms of another norm $\|\cdot\|$.
**2** We shall be brief here and just estimate the terms that are the most challenging.

**chance** They have a 90 per cent chance of success.

**change** **1** [*see also*: adaptation, adjustment, modification] The shape of $F$ undergoes radical changes as $x$ moves from $A$ to $B$. • The change in $\arg z$ around $\Gamma$ is..... • A change in perspective allows us to gain not only more general, but also finer results than in [ST]. • After the change of variable $z =$..... • Theorems 3 and 6 of [2], with the appropriate changes, are also valid. • The rest of the proof goes through as for Corollary 2, with hardly any changes. • The present proof is so arranged that it applies without change to holomorphic functions of several variables. • From (ii), with an obvious change in notation, we get..... • Properties involving topological centres are unaffected by a change to an equivalent weight. • a slight ⟨small/subtle/considerable/radical/profound/major/substantial⟩ change
**2** [*see also*: adapt, adjust, alter, convert, modify] Reversing the orientation of $Y$ changes $B$ into $-B$. • By changing at least one of the circles to a rectangle, we obtain..... • The method is to change variables to $y = x + c$ so that..... • The parameter of the model is changed from $p$ to $1 - p$. • If..... then $A$ changes from $(b, c)$ to $(c, d)$. • The difference can change only by an even integer. • The Tits cone may change (e.g. in dimension) under extension or restriction of $W$. • When we pass from $T$ to $T + \delta$, $f(z)$ changes by approximately $M$. • Changing back to the original variable $x$ yields..... • The limit in 4(b) is unchanged if $g$ is replaced by $f$. • Figures 2 and 3 are unchanged by reflecting about the vertical axis. • These definitions are taken almost unchanged from the papers of Furstenberg [2, 3].

**character** Properties (a) to (c) are analytic in character.

**characteristic** **1** [*see also*: feature, aspect, detail, ingredient, point] The two characteristics are connected, but the relationship is quite a complex one.
**2** [of sth; *see also*: typical, peculiar] This property is characteristic of functions in $Q$.

**characterization** Neumann's characterization of the elements which induce an indecomposable operator is as follows:..... • In our next theorem, we state a characterization of..... which does not seem to have been noticed previously.

**characterize** This condition completely characterizes $A_p$ when..... • The chapter concludes with a theorem which shows that the maximum property "almost" characterizes the class of holomorphic functions. • Most distribution spaces can be characterized through the action of appropriate convolution operators. • Our main results state in short that MEP characterizes type 2 spaces among reflexive Banach spaces. • More generally this argument also applies to characterizing Hurewicz subsets of $I$.

**check** **1** [*see also*: examination, inspection, verification] It is an elementary check that $A$ is a vector space. • Then an easy check shows that.....
**2** [*see also*: examine, verify, test] It is easily checked that $f$ is l.s.c. • The continuity of $f$ is readily checked, and we can then apply Morera's theorem. • The only thing to check is that maps compose correctly; but this is an easy, if tedious, verification. •

**choice** [*see also*: selection] Thus $F$ is independent of the choice of the family $S$. • Indeed, it is routine to verify that the index so constructed is independent of the choices made. • We shall see that the scalar $u(g)$ does not depend on the choice of $\xi$, nor on the isomorphism class of $M$. • We do not know how $V$ depends on the various choices made. • The choice of $A$ is clearly irrelevant, so assume $A = 0$. • Our choice of $V$ shows that..... • With this choice of $b$,..... • For this choice of $\alpha, \beta$ and with $u = z = s$, the expression (5.3) simplifies greatly. • Corresponding to each choice of $V$ there is a function $f$ such that..... • The problem is that, whatever the choice of $F$, there is always another function $f$ such that..... • This just amounts to a choice of units. • By choice of $V$,..... • Having established (1), one might be tempted to try to extend this result to general $p$ through the choice of a suitable ideal $B$. • There are $O(1)$ possible choices for $x$. • Where there is a choice of several acceptable forms, that form is selected which..... • It is the freedom of choice of $D$ in this construction that enables us to..... • On the other hand, there is enormous ambiguity about the choice of $M$. • In order to carry out the construction, we must make a judicious choice of $P$. • Thus $y \leq x$ when we make the choice $c_n = 2$. • By revising our choice of $A$ if necessary, we may assume that.....

**choose** [*see also*: select, pick] This implies that however we choose the points $y_i$, the intersection point will be their limit point. • In fact, we are at liberty to choose the function $f$, so we set $f =$..... • This also resolves the ambiguity introduced earlier in choosing an order of the lifts of $U$. • Where we could, we have chosen these examples from naturally occurring mathematical structures. [NOT "choosen"; also, note the double $r$ in *occurring*.] • .....where $C$ is so chosen ⟨chosen so⟩ that..... • .....where $C$ can be chosen independent of $n$. • Here $a$ and $b$ are chosen to satisfy..... • Here $Y$ is a Poisson variable suitably chosen to approximate $X$ in distribution. • If $A$ is such an operator (appropriately chosen) then..... • However, the space $Z$ depends crucially on the particular ambient algebra $A$ chosen. • The line $T$ makes a right angle with the chosen direction.

**circle** What is $F(c)$ if $c$ is a positively oriented circle? • a circle with centre $a$ and radius $r$

**circumstances** [*see also*: state, situation, condition] Only in exceptional circumstances is it true that $f(x+y) = f(x) + f(y)$. [Note the inversion.] • The idea is that $C$ is fixed, but $X$ and $Y$ vary according to circumstances. • Under ⟨In⟩ what circumstances can this happen?

**circumvent** [*see also*: get around, overcome] The assumptions imposed on $f$ circumvent measurability difficulties. • To circumvent this problem, we pass from consideration of $F(A)$ to consideration of $A$.

**cite** [= mention; *see also*: quote] In the proof of the cited theorem, we found sequences $a$ and $b$ with certain properties. • the paper cited on p. 45 • the above-cited paper

**claim** **1** To establish the last claim, let..... • Their remarkable achievement seemed to validate John's claim. However, it soon turned out that.....

**2** [*see also*: assert] Lax claimed to obtain a formula for....., but the argument turned out to be incomplete. • Note that for semilattices one could not claim that $A$ is algebraically closed in $B$. • We claim that, by setting $w$ to zero on this interval, the value of $F(w)$ is reduced. • In particular $v$ has all the properties that the theorem claims for $u$. • So $F$ must be constant on $H$, thereby showing that $A = B$, as claimed ⟨desired/required⟩. • Since....., the generators of $G$ are as claimed.

**clarity** When clarity requires it, we shall write..... • We shall write "a.e. [$\omega$]" whenever clarity requires that the measure be indicated. [Note the subjunctive *be*.] • For the sake of clarity, we shall indicate in what follows to which space $X$ belongs. • It seems preferable, for clarity's sake, not to present the construction at the outset in the greatest generality possible. • Standard Banach space notation is used throughout. For clarity, however, we record the notation that is used most heavily.

**class** Let $F$ be of class $T^k$ for some $k$. • Then $E$ is an equivalence relation on $S$. Each $E$-class of $S$ contains..... • We divide them into three classes depending on the width of.....

**classic** [*see also*: classical] Chapter 2 of the classic text [6] by R. Nevanlinna has a detailed treatment of this construction. • [Note the difference between *classic* and *classical*: *classic* means "of acknowledged excellence" or "remarkably typical" (*a classic example*); and *classical* means "well-established, not modern".]

**classical** [*see also*: classic] Theorems 1 to 3 are classical results, due to Lebesgue. • Since most of the results presented are quite classical (the novelty lies in the arrangement, and some of the proofs are new), I have not attempted to document the source of every item. • The following theorem is clearly motivated by the classical LP-decomposition. • Our proofs make substantial use of classical topology of the plane. • [Note the difference between *classic* and *classical*: *classic* means "of acknowledged excellence" or "remarkably typical" (*a classic example*); and *classical* means "well-established, not modern".]

**classification** The middle part of Table 2 compares the classification according to max $a_i$, where only the longitudinal information is utilized, with those according to max $b_{ik}$, where both longitudinal and survival information are used.

**clause** Clause (i) of the following result was given in [5, Prop. 4].

**clear** [*see also*: evident, obvious, plain] The definition of $M$ makes it clear that $F$ is continuous. [Note that the *it* is necessary here.] • As the first paragraph of the proof will make clear, we can choose $f$ in such a way that..... • Now (d) is clear from the very last statement of Theorem 4. • The difficulty is that it is by no means clear what one should mean by a normal family. • It is also clear that there are extensions to....., but they do not seem to be worth the effort of formulating them separately. • It is intuitively clear that the amount by which $S_n$ exceeds zero should follow the exponential distribution. • If $G$ is clear from context, then we suppress reference to it in the notation. • However, it is unclear how to prove Corollary 3 without the rank theorem.

**clearly** [*see also*: evidently, manifestly, obviously] It would clearly have been sufficient to assume..... • It seems that the relations between these concepts emerge most clearly when the setting is quite abstract, and this (rather than a desire for mere generality) motivates our approach to the subject.

**close** **1** [*see also*: finish, conclude] We close this section with a discussion of..... • We close this article by addressing, in part, the case of what happens if we replace the map $T$ by convolution. • In closing this section we take up a result which will play a pivotal role in the characterization of..... • We close this off by characterizing.....
**2** [*see also*: near] We have to check that $F$ does not get too close to $p$. • for $t$ close to 0 • Part of the conclusion is that $F$ moves each $z$ closer to the origin than it was. • Let $P$ be a point of $U$ closest to $Q$. • It is this point of view which is close to that used in $C^*$-algebras. • See [AB] for a proof that is close to the original one. • The above bound on $a_n$ is close to best possible ⟨to the best possible⟩. • The products $F_iG_i$ are very close to satisfying (1). • How close does Theorem 1 come to this conjecture? • These results therefore describe the very close connection between the method of encoding and the structures we are aiming to classify.

**closely** [*see also*: intimately] Our results are closely related to those of Strang [5]. • This notion is closely connected with that of packing dimension. • The proof follows very closely the proof of (2), except for the appearance of the factor $x^2$. • There are other problems with this example which would hinder any attempt to follow the proof given here too closely. • The proof closely parallels that of Theorem 1. • The spectral theory of..... is closely linked to the discrete Hilbert transform.

**clue** A complete explication of the Fox spaces is warranted, as it will likely reveal further clues to the differences between the parabolic and hyperbolic theories.

**cluster** The observed values of $X$ will on average cluster around points where.....

**coefficient** Let $D$ be the coefficient of $x^n$ in the expansion of $f$. [NOT "coefficient by $x^n$"] • Equating coefficients we see that..... • Equating the coefficient of $x^2$ in $V$ to zero, we get..... • Now equate the coefficients of $x^2$ at either end of this chain of equalities.

**coincide** Part (i) of the next result reveals that the generic and asymptotic base sizes do indeed coincide. • First note that the stabilizer of any given collection of subspaces of $V$ coincides with the unit group of a suitable $K$-algebra.

**coincidence** This is no coincidence, in the light of the remarks preceding Definition 2. • However, this equality turned out to be a mere coincidence.

**collaboration** Theorem B is the main result of our investigation of stable ergodicity which we made in collaboration with A. Burks.

**collect** [*see also*: combine, gather] Collecting the terms with even powers of $x$, we obtain.....

**collection** [*see also*: set] Instead of dealing with lines one by one, we deal with collections of lines simultaneously. • Neighbourhoods of points in these spaces appear at first glance to have a nice regular structure, but upon closer scrutiny, one sees that many neighbourhoods contain collections of arcs hopelessly folded up. • Continuing in this fashion, we get a collection $\{V_r\}$ of open sets, one for every rational $r$, with..... • Next we relabel the collection $\{A_n, B_n\}$ as $\{C_n\}$. • The words *collection, family* and *class* will be used synonymously with *set.* • The theorem implies that some finite subcollection of the $f_i$ can be removed without altering the span.

**colour** **1** Let $e_i$ be the edge of colour $i$. • There exists a solution $x \in S^s$ whose coordinates all receive the same colour.
**2** Because $G$ is a group, there is exactly one edge coloured green that is incident to $g$. • Let $A(n; k, l)$ denote the number of four-coloured partitions of $n$ having $k$ parts coloured $a$ and $l$ parts coloured $b$. • Lie algebras of graph type correspond, in the sense of Proposition 4, to coloured graphs with each edge coloured a different colour. • Then $m$ is $k$-invariant if and only if any $z_k$-coloured edge with one vertex in $V$ has the other vertex in $V'$. • Suppose that the edges of the graph $G$ are coloured with $2p$ colours in such a way that the edges of any single colour form a perfect matching.

**column** We tabulate the outcome for $n \geq 10$; in particular, the column headed $R$ lists $R(n)$ truncated to three decimal places.

**combine** [*see also*: collect, couple, conjunction, gather, piece together, pull together] If we combine this with Theorem 2, we see that..... • Theorems 1 and 2 combined give a theorem of Fix on..... • Now (1) is just (2) and (3) combined. • Theorems 1 and 2 combine to give the following result. • Then (5) combined with (6) gives..... • On combining this with our other estimates in (3.5), we deduce that..... • As noted in the introduction, this is basically combining Sawyer's result with a variation of the arguments of Hunt.

**come** ....., the last inequality coming from (5). • This argument comes from [4]. • If we restrict $A$ to sections coming from $G$, we obtain..... • Our interest in..... comes from the fact that..... • We now come to a theorem which was first proved by..... • We will call on this version of the inverse theorem when we come to our applications in Section 2. • Two necessary conditions come to mind immediately. • However, for these techniques to succeed, not only must one variable of (3.1) be free to take on any colour, but it is also necessary for the solution set to possess a well-factorable parametrization, allowing for the theory of multiplicative functions to come into play. • How close does Theorem 1 come to this conjecture? • The algebra $D(F)$ comes equipped with a differential $d$ such that $H(d) = 0$. • The link between differential equations and homotopy groups first came about as a result of the realization that ellipticity of a differential operator can be defined in terms of its symbol. • Along the way, we come across some perhaps unexpected rigidity properties of familiar spaces. • Thus, everything comes down to proving the existence of $M$. • This is where the notion of an upper gradient comes in. • Other situations in dynamics where the $p$-adic numbers come up are surveyed in [W]. • [Do not write "it comes" when you mean *it follows that.*]

**commence** [*see also*: start, begin] The paper was commenced whilst the second author held a Fullbright Fellowship.

**comment** [on sth; *see also*: remark] He makes the following comments:..... • This corollary calls for some explanation and comment. • The author thanks John Fox for helpful comments on the content and presentation of this paper. • The author gratefully acknowledges the referee's helpful comments pertaining to the first draft of this paper. • We shall encounter similar situations again, and shall apply convergence theorems to them without further comment.

**common** [*see also*: customary, familiar, usual] The functions $f_i$ $(i = 1, \dots, n)$ have no common zero in $\Omega$. • Then $F$ and $G$ have a factor in common. • It has some basic properties in common with another most important class of functions, namely, the continuous ones. • Take $g_1, \dots, g_n$ without common zero. • Denote by $\theta$ the angle at $x$ that is common to these triangles. • Here we use an inductive procedure very common in geometric model theory.

**commonly** [*see also*: usually] If $f$ maps $D$ into itself, then $T$ is commonly called a composition operator.

**communication** Using a basis of this kind was suggested to us by Fox (private communication).

**commute** The composition $f \circ g$ induces a linear embedding $F$ making the diagram commute.

**companion** In a companion paper [5] we treat the case..... • Here is a companion result to Theorem 2 which shows that.....

**comparable** Thus $\theta$ will be less than $\pi$ by an amount comparable to $a(s)$.

**compare** [with sth; to sth; *see also*: relative] The algorithm compares $x$ with each entry in turn until a match is found or the list is exhausted. • Our asymptotic results compare reasonably well with the numerical results reported in [8]. • We divide them into three classes depending on the width of the middle term as compared with the width of the other terms. • We show that $A$ is negligible compared with $B$. • Quarterly sales rose by 9% compared with the same period in 2007. • A computer virus can be compared to a biological virus. • [Use *compare with* when you are contrasting two things, and *compare to* when you want to liken them.]

**comparison** Comparison of (2) and (3) gives..... [OR A comparison]

**compensate** [*see also*: cancel, offset] We can immediately use one of these poles to compensate for the effect of the pole at $s = 0$.

**complement** We denote the complement of $A$ by $A^c$ whenever it is clear from the context with respect to which larger set the complement is taken. [NOT "compliment"]

**complete** **1** [*see also*: whole, entire, full, total] Thus the proof of the lemma is complete.
**2** [*see also*: accomplish, finish] The proof is completed by invoking Theorem 5. • This completes our argument for (1). • ....., which completes the proof. [NOT "what completes the proof"]

**completely** [*see also*: entirely, fully, wholly] We remark that Bennett and the third author completely solved equation (4) in the case when..... • The intervals we are concerned with are either completely inside $A$ or completely inside $B$.

**completeness** We include the proof for completeness. • For completeness of exposition, we now recall the definition of the ordering on $R$.

**completion** Mary Lane deserves our special thanks for her part in bringing this volume to a successful completion.

**complex** [*see also*: complicated, difficult, hard, involved, intricate] The two characteristics are connected, but the relationship is quite a complex one. • In detail the classification is complex, but in essence it is simple.

**complicated** [*see also*: complex, difficult, elaborate, hard, involved] However, for three or more subgroups, matters become more complicated. • The known results show that the situation is infinitely more complicated there than in $L^2$. • Although the idea is simple, its implementation is complicated by the fact that..... • We omit the details, which are notationally complicated.

**complication** [*see also*: difficulty, problem, trouble] However, as we are about to see, this complication is easily handled. • A further complication arises from 'BP', which works rather differently from the other labels.

**compose** [*see also*: contain, comprise, consist, constitute, make up] Illiterates compose 20% of the population. • Each committee is composed of ten senators.

**composition** The composition $f \circ g$ induces a linear embedding $F$ making the diagram commute. • Then $G$ is a group with composition as group operation. • composition on the right with $p$ • The automorphism groups $\mathrm{Aut}(F)$ and $\mathrm{Aut}(G)$ act on the set of such epimorphisms by pre-composition and post-composition, respectively.

**comprehensive** For a comprehensive treatment and for references to the extensive literature on the subject one may refer to the book [M] by Markov.

**comprise** [*see also*: compose, consist, contain, constitute, make up, include] The monograph comprises three parts. [= has three parts only; cf. The monograph includes two chapters on divergent series. Use *comprise* only when you mention all parts.] • [The form "is comprised of" (instead of *is composed of/consists of/is made up of*) is considered incorrect by many native speakers.]

**computable** This solution has the additional advantage of being easily computable.

**computation** [*see also*: calculation] Incidentally, our computation shows that..... • A short computation shows that..... • It is sufficient to make the computation for $T$. • In fact, the computation for $A$ becomes somewhat simpler. • One of the appealing aspects of the spectral set $\gamma$ is that it readily lends itself to explicit computation. • This proves one half of (2); the other half is a matter of direct computation. • However, one needs to perform computations which become time consuming as $n$ increases.

**computational** A computational restraint is the algebraic number theory involved in finding these ranks, which will typically be more demanding than in our example of Section 1. • We thank Jacob Hicks for his substantial computational aid.

**compute** [*see also*: calculate] By computing the second derivative we note that $x = 1$ is a maximum point for $f$. • Find integral formulas by means of which the coefficients $c_n$ can be computed from $f$. • This provides an effective means for computing the index. • Computing $f(y)$ can be done by enumerating $A(y)$ and testing each element for membership in $C$.

**conceivably** [*see also*: possibly] Conceivably, $S$ may also contain other sets.

**concentrate** In this section, we concentrate on those maps that satisfy..... [NOT "We are concentrated on those maps"] • the unit mass concentrated at $x$

**concept** [*see also*: idea, notion] We now turn to a brief discussion of another concept which is relevant to John's theorem. • It seems that the relations between these concepts emerge most clearly when the setting is quite abstract, and this (rather than a desire for mere generality) motivates our approach to the subject. • They defined the concept solely in terms of the norm of the Banach space, deliberately avoiding any extra structure.

**conceptually** We remark that this proof seems conceptually and calculationally simpler. • The aim of this section is to illustrate the utility of Theorem 5 in explicit computations by investigating some simple but conceptually interesting examples.

**concern** [*see also*: regard, relate, pertain, involve] **1** Our next concern will be the behaviour of $P(r)$ as $r$ tends to 0.
**2** It is the connection between..... that will concern us here. • This book is wholly concerned with..... • We now introduce the algebras we shall be concerned with. • The question we are concerned with is whether or not $f$ is $C^1$. • each of the spaces concerned • In what follows, we shall concern ourselves only with case (a). • For relevant background material concerning random walks, see [2]. • Functions which are equal almost everywhere are indistinguishable as far as integration is concerned. • Concerning (i) ⟨Regarding (i)/For (i)⟩, we first prove that.....

**concise** [= succinct; *see also*: brief] in a concise manner

**concisely** More concisely, we consider the measurable space $(X, B)$.

**conclude** [*see also*: close, end, finish, complete, deduce] We conclude this section with a useful lemma. • We conclude with two simple lemmas to be used mainly in..... • This concludes the verification of Claim 2. • The proof concludes by observing that..... • The chapter concludes with a theorem which shows that the maximum property "almost" characterizes the class of holomorphic functions. • We can now integrate $n$ times to conclude that (1) indeed holds. • We conclude from Theorem 4 that $A$ is Arens regular. • We may use the theorem to conclude the existence of $g$.

**conclusion** [*see also*: assertion, statement] The first conclusion is immediate from Theorem 1. • This conclusion does not follow if the condition "$f \in A$" is omitted. • Part of the conclusion is that $F$ moves each $z$ closer to the origin than it was. • One might hope that in the particular case of the GL energy, this could be established, but we do not see an easy path to such a conclusion. • ....., which is the desired conclusion. • Actually, the proof gives an even more precise conclusion:..... • Identical conclusions hold in respect of the condition BN. [= concerning BN] • Here are some other situations in which we can draw conclusions only almost everywhere. • This simple device allows us to reach the same conclusion as in the $q$-convex case. • However, a few tentative [= cautious, not firm] conclusions can be drawn. • We shall see that the two cases where $A = 1$ and where $B = 2$ give contrasting conclusions.

**concrete** [*see also*: precise, specific] We can now restate Theorem 1 in concrete terms:.....

**concretely** Concretely, all degrees (both homological and intrinsic) of dual basis elements of $X'$ are the negatives of the degrees for the corresponding basis elements of $X$.

**condition** **1** [*see also*: assumption, requirement] We prove, under mild conditions on $f$, that..... • In this section we investigate under what conditions the converse holds. • They established the Hasse principle subject to a rank condition on the coefficients. • Take $N$ to be a family of normal measures in $P(X)$ such that $N$ is maximal subject to the condition that the supports of

the measures in the family are pairwise disjoint. • This is a condition on how large $f$ is. • The next theorem provides conditions for the existence of..... • Further, conditions for the equality $A_1 = A_2$ are given in [3, Sect. 7]. • The corollary gives a necessary and sufficient condition on $p$ for $g$ to belong to $A_p$. • A necessary and sufficient condition for $A$ to be open is that $C$ be closed. • Then (3.5) is a necessary and sufficient condition for there to be a function $f$ such that..... • This condition also turns out to be necessary. • It should be no surprise that a condition like $a_i \neq b_i$ turns up [= appears, shows up] in this theorem. • Condition (c) is intended to give us firm control over..... • Finally, we must check that our $F$ satisfies condition (2) of Theorem 1. [NOT "verifies condition (2)"] • Let $A$ be the subset of $X$ where this coboundary condition obtains. [= is satisfied] • We can also appeal to Lemma 5 to see that the uniform continuity condition (5.3) is met. • When the rank condition fails to hold we use (3) instead. • We note that $H$ is in fact not Lipschitz continuous if this condition is violated. • a restrictive ⟨stringent⟩ condition
**2** Let $T_1, ..., T_r$ be i.i.d. uniform $[0, 1]$ random variables conditioned to sum to 0 modulo 1.

**conditional** Define $a_k$ to be the probability that exactly $k$ out of the $2n$ values $X_i$ exceed $T$, conditional on $X_0 > T$. • Here $Q_j$ for $j = 1, ..., n$ are drawn independently, conditional on the values generated at level $m$.

**conduct** [*see also*: carry out] This work was conducted during a visit of the author to Dartmouth College. • This proof is similar to the one offered here, but we wish to note that ours was conducted independently and posted on arXiv in 2016.

**conference** In 2000, two important number theory conferences were held at Princeton University.

**confine** [*see also*: limit, restrict] We confine ourselves to discussing the case..... • For simplicity, we confine attention to radial moments.

**confirm** This interpretation is confirmed by (4). • Theorem 4 confirms conjecture H when $B = 1$.

**conflict** **1** The reader is cautioned that our notation is in conflict with that of [3].
**2** Unfortunately, the notation from number theory slightly conflicts with the notation from probability theory.

**confound** [*see also*: confuse] This group will be designated by $E_3$ (not to be confounded with Euclidean 3-space).

**confuse** [*see also*: confound] Encode the $h$-vector as a polynomial $h(x, y)$ in noncommuting variables $x$ and $y$ (not to be confused with the indices in the previous section).

**confusion** It will cause no confusion if we denote..... • If no confusion can arise, we write $K$ for both the operator and its kernel. • We drop the subscript when confusion is unlikely. • For brevity, and when there is no danger of confusion, we sometimes omit the superscripts.

**conjectural** There are three conjectural answers to this question.

**conjecturally** For each finite abelian group $G$, the density $a(G)$ is conjecturally positive. • Conjecturally, $B(E)$ is large on average when $r = 0$ and small when $r \geq 1$.

**conjecture** **1** [*see also*: hypothesis] The conjecture will be disproved by exhibiting..... • A recent breakthrough of Moreira [M] resolves a longstanding conjecture of Hindman H], proving partition regularity of the equation $x + y^2 = yz$. • In addition to illustrating how our formulas work in practice, it provides a counterexample to Brown's conjecture. • The conjecture (now known not to be true in general) was that..... • The as yet unproved conjecture of Newman is that..... • Conjecture 2 of [KH], to the effect that [= stating that] there is no relation $P$ with $E(P) = 1$, still remains open. • In 1991, Valdez [2] made a conjecture equivalent to the following. • We make a conjecture and ask two questions concerning the set of..... • Fox [F] has formulated an analogous conjecture for his family of quadratic twists. • Some partial evidence to support this conjecture is discussed in [3]. • We offer numerical evidence to support a conjecture that there exist infinitely many primes of this type. • All the evidence points to the validity of the conjecture. • How close does Theorem 1 come to this conjecture?
**2** It is conjectured in [B3] that..... • Specifically, he conjectured the existence of a map such that..... • This conclusion matches the elliptic curve rank behaviour conjectured by Goldfeld [G].

**conjunction** [*see also*: combine, together] This, in conjunction with (6), yields..... • For later use in conjunction with the weighted averages occurring in (2), we next consider..... [Note the double $r$ in *occurring*.]

**connect** [*see also*: join, link, relate, tie, associate] the segment connecting ⟨joining⟩ $a$ to $b$ • This notion is closely connected with that of packing dimension. • [Use *connect to* when you mean "join", and *connect with* when you mean "relate".] • The two characteristics are connected, but the relationship is quite a complex one.

**connection** [*see also*: link, relationship] It is the connection between..... that will concern us here. • These results therefore describe the very close connection between the method of encoding and the structures we are aiming to classify. • We now proceed to make the connection between segment factors and quadratic approximation. • The problem has a very natural connection with the problem of the distribution of the zeros of a bounded holomorphic function in a half-plane. • However, the connection with Gromov's work has been obscured in recent years by an emphasis (in the algebraic topology literature) on configuration spaces. • Note in connection with (iv) that..... • In this connection, we remark that.....

**consecutive** [= successive] The elements of each array must occupy consecutive memory locations. • Suppose the first three characters of the pattern match three consecutive text characters. • Its role is to rule out having two or more consecutive $P$-moves (on the grounds that they can be performed in one go).

**consequence** [*see also*: result, effect, outcome, implication] This is a consequence of Dini's theorem. • It is a consequence of the Hahn–Banach theorem that..... • An obvious consequence of Theorem 2 is the following. • As a consequence of Lemma 2, there is..... • This has numerous important consequences; to name just two, Brauer proved that..... • This is impossible in consequence of the last corollary. • This article features results in both spectral theory and operator ergodic theory made possible by a recent renewal of interest in the consequences of James's inequalities.

**consequently** [*see also*: hence, thus, therefore, so] Consequently, $A$ has all geodesics closed if and only if $B$ does.

**consider** [*see also*: account, discuss, address, deal, regard, think, take up, treat, view] We shall be considering $L$ on various function spaces. • All our results can be extended in this way, but we shall stick to considering $P$ rather than $P'$. • Here $U$ is considered ⟨viewed/regarded⟩ as acting on $M$. • An arc is considered a degenerate star. • We may consider the Banach space $Z$ to be a subspace of $M$ in the following way. • There are several cases to consider:..... • For size 1 this makes no difference, but for sizes 2 and 3 it considerably cuts down the number of cases to be considered. • We consider every subset of $N$, whether finite or infinite, to be an increasing sequence. • The product being considered grows like $n^3$. • Here the constants of proportionality depend on the particular curve being considered. • We begin by describing the class of functions $f$ considered, which includes the special cases quoted above. • The precise problem considered is the following:.....

**considerable** [*see also*: important, significant, substantial] However, they now differ by a considerable amount. • It is possible that the methods of this paper could be used to....., but there remain considerable obstacles to overcome.

**considerably** [*see also*: greatly, significantly, substantially] The performance of the device has improved considerably. • Furthermore, adopting this strategy considerably eases constructing a coding tree from a linear order. • For size 1 this makes no difference, but for sizes 2 and 3 it considerably cuts down the number of cases to be considered. • Theorem 3 is remarkable in that considerably fewer conditions than in the previous theorems ensure universality.

**consideration** [*see also*: check, discussion, examination, scrutiny, treatment] In this section we return to our general consideration of $p(R)$. • It now follows from the maximum modulus theorem that $F_n(A) \le A$, and consideration of $F_{-n}$ shows that actually $F_n(A) = A$. • Further consideration of centralizers shows that..... • We make two standing assumptions on the maps under consideration. • A moment's consideration will show that..... • By symmetry considerations [= For symmetry reasons], it is sufficient to search over a region in which.....

**consist** [*see also*: comprise, compose, make up, contain, lie] This group consists of the elements of $GL(n)$ of determinant 1. [= is made up of] • Let $B(\Omega)$ be the quotient of $B^b(\Omega)$ by the closed linear subspace consisting of the functions which are zero outside a meagre subspace of $\Omega$. • The subspaces of $M(\Omega)$ consisting of the *discrete* and *continuous* measures are $M_d(\Omega)$ and $M_c(\Omega)$, respectively. • We define the set $T$ to consist of those $f$ for which..... • Let $R$ consist of all $z = x + iy$ such that $|x| < 1$. • But $M$ does not consist of 0 alone. • The inverse image of $A$ consists of just the basepoint of $X$. • The proof consists in the construction of..... [= The main feature of the proof is] • The difficulty consists in generalizing (b).

**consistent** This is consistent with the notation used in [2].

**constant** Here $c$ denotes a constant which can vary from line to line. • The least such constant is called the norm of $G$. • Unfortunately, $F$ is defined only up to an additive constant. • The implied constants ⟨The constants implicit in the symbol $\approx$⟩ depend only on $r$.

**constantly** the constantly zero function

**constitute** [*see also*: form, make up, represent, account for] Nitrogen constitutes 78% of the earth's atmosphere. • Volunteers constitute 90% of the Unit's work force. • 52 cards constitute a pack.

**constraint** [*see also*: limitation, restraint, restriction] The idea is to relax the constraint of being a weight function in Theorem 3.

**construct** [*see also*: build, establish, develop, create, make] Then $F$ is constructed from the $F_j$. • Although [1] deals mainly with the unit disc, most proofs are so constructed that they apply to more general situations. • Indeed, it is routine to verify that the index so constructed is independent of the choices made. • From this point of view, the constructed map is simply..... • Thanks to Lemma 2, we can now modify the proof of Theorem 3 by inductively constructing five sequences.....

**construction** Actual construction of..... may be accomplished in a variety of ways. • The following construction can be carried out. • Similar constructions may be made for other $n$ odd. • We can make a similar construction to form $E_n$. • While the whole construction takes place outside $N$, any finite initial segment is in $N$.

**consult** We encourage the reader unfamiliar with techniques from the theory of..... to consult [BS].

**contain** [*see also*: comprise, include] That (2) implies (1) is contained in the proof of Theorem 1 in [4]. • The preceding proof contains a result which is interesting enough to be stated separately. • Section 2 contains an overview of the necessary background. • Since $H \in F$, it follows that $K$ is not contained entirely within any $H_i$.

**content** **1** That (2) implies (1) is the content of Corollary 3. • The notion of turbulence almost exactly captures the combinatorial content of not being an $S$-action. • The author thanks John Fox for helpful comments on the content and presentation of this paper. • Intuitively, entropy of a partition is a measure of its information content—the larger the entropy, the larger the information content.
**2** We content ourselves in the present paper with discussing finitely generated groups $G$.

**context** [*see also*: framework, setting, set-up] in the present context • In the physical context already referred to, $K$ is the density of..... [Note the double $r$ in *referred.*] • Berg spaces have been rarely considered outside the metric context. • The context will make it clear whether $S$ denotes a permutation of $M$ or the corresponding symmetry. • When the target space is clear from context, we just write..... • If $G$ is clear from context, then we suppress reference to it in the notation. • Strictly speaking, we should write something like $a(l, m, n)$ to reflect the dependence; we shall rely upon context instead. • To place Theorem 1 in context, consider two real vector fields.....

**continue** [*see also*: extend, go on, proceed, pursue, remain, persist, stick, still] Suppose that the process continues indefinitely. • Continuing in this fashion, we get a collection $\{V_r\}$ of open sets, one for every rational $r$, with..... • Continuing in this manner, we see that for $\sigma \geq 4$, the curve $C_{4k+3}$ is found in the half-strip $B$. • This recursion continues, producing a sequence of finite sets such that..... • By abuse of notation, we continue to write $f$ for $f_1$. • Since $Z$ is a finite set, we may continue subtracting suitable scalar multiples of the $x_i$ from $x$. • We continue doing so until we get out of $S$. • Let us continue with the proof of Theorem 2. • An obvious question to ask is whether the assertion of Theorem 1 continues to hold for..... • This paper, for the most part, continues this line of investigation. • This work continues research begun in [5].

**continuous** We note that $H$ is in fact not Lipschitz continuous if this condition is violated. • a function continuous in space variables • More precisely, $f$ is just separately continuous. • The map $f$, which we know to be bounded, is also right-continuous. • a function continuous from the right • We follow Kato [3] in assuming that $f$ is upper semicontinuous. • Examples abound in which $P$ is discontinuous.

**continuum** The set $E$ has the cardinality of the continuum. • Suppose $X$ is a separable space of cardinality continuum. • However, $F$ has continuum many components.

**contradict** [sth; *see also*: contrary] This contradicts the fact that..... [NOT "contradicts to the fact"] • ....., which contradicts $F$ being countable. • But this is contradicted by Proposition 3 applied to $g$.

**contradiction** [*see also*: contrary, otherwise] To obtain a contradiction, we suppose that..... • Suppose, to derive a contradiction, that..... • Striving ⟨Aiming⟩ for a contradiction, suppose that..... • Suppose, towards a contradiction, that..... • To see that $m = 1$, assume for contradiction ⟨for a contradiction⟩ that..... • Assume for the sake of contradiction that $X$ is compact. • Hence $X = 1$, a contradiction. • Now we have the required contradiction since..... • However, this cannot hold for infinitely many $n$, and we have the required contradiction. • This leads to the contradiction that $0 < a < b = 0$. • ....., in contradiction with [OR to] Lemma 2. • This is a clear contradiction of the fact that.....

**contrary** [to sth; *see also*: otherwise, contradict, contradiction] Suppose that, contrary to our claim,..... • Suppose the contrary and choose..... • We now show that $A$ is closed. Suppose that, on the contrary, there is an $x$..... • In the contrary case,..... • While nonparametric priors are typically difficult to manipulate, we believe the contrary is true for quantile pyramids. • Hence $F$ is bounded, contrary to assumption. • There is no evidence to the contrary. • [Do not write "Contrary to [5], our example is finite-dimensional" if you mean *In contrast to [5], our example is finite-dimensional.*]

**contrast** **1** [to/with sth; *see also*: difference, oppose] Note that, in contrast to $F$, the function $G$ is bounded. [NOT "contrary to $F$"] • In contrast, Theorem 2 shows that..... • By contrast, $T$ does not have this symmetry. • This is in marked contrast to the behaviour of orthonormal sets in a Hilbert space. • The theorem above stands in stark contrast to the case of absolutely continuous functions $g$, for which..... • Note the contrast with Theorem 3.
**2** [with sth; *see also*: differ] This contrasts sharply with the situation in metrizable spaces. • This contrasts with (but does not contradict) Theorem 2 of [6]. • We shall see that the two cases where $A = 1$ and where $B = 2$ give contrasting conclusions.

**contribute** [sth; to sth] The terms involving $a \neq 1$ contribute $O(n)$, since..... • These upper bounds are too large to be useful in computer calculations in general, but the ideas in the proofs will surely contribute to better bounds in the future. • Indeed, these edges only contribute to the sets $S_1$ and $S_3$ by assumption, and the contribution to $S_1$ cancels the contribution to $S_3$.

**contribution** [from sth; to sth] This decrease is offset by the contribution from the poles. • Thus we may count the contribution to the periodic points from each prime separately. • We shall thus avoid doubly counting the same contribution. • Note that $A_n$ makes only a contribution of at most $N^2$. • Indeed, these edges only contribute to the sets $S_1$ and $S_3$ by assumption, and the contribution to $S_1$ cancels the contribution to $S_3$. • Clearly, the contribution from those $r$ with $A(r) > 0$ can be neglected. • However, we prefer to avoid this issue altogether by neglecting the contribution of $B$ to $S$. • If nothing else, I hope to convince my readers that Segal's theorem deserves recognition as a profound contribution to Gaussian analysis. • Our work is a contribution to ongoing efforts to classify the finite primitive permutation groups with base size 2. • It is appropriate to highlight McCann's contribution whose 1994 thesis disclosed the relevance of convex gradients to geometric inequalities.

**control** [of/on/over sth] **1** This gives some control over the behaviour of..... • Condition (c) is intended to give us firm control over..... • This extension retains control on..... at the sacrifice of losing some control on..... [NOT "loosing"] • The requirement that competitors are symmetric will only be used to get some very rudimentary control on the asymptotics of $G$. • The aim of this paper is to exhibit some surprisingly elementary principles that make it possible to obtain sharp control of $\gamma_2(T)$ in various interesting examples.
**2** The obstacle we have is that we must control the area of $G$. • There are essentially two general approaches that have been used to control $\gamma_2(T)$. • We shall use a version of the well-known Rips construction [R] to construct hyperbolic groups with controlled properties.

**convenience** For convenience we ignore the dependence of $f$ on $g$. • For convenience of exposition, we work with an error term of the form..... • For notational convenience, set $q = p'$. • We note that the assumption of GCH is made for convenience and ease of presentation. • For the convenience of the reader, we repeat the main points. [OR For the reader's convenience; *not*: "For the commodity of the reader"]

**convenient** [*see also*: appropriate, suitable, useful, suit] This realization is particularly convenient for determining..... • It is convenient to view $G$ as a nilpotent group. • In this case it is natural (and notationally convenient) to pick $W$ to be..... • It will be convenient to state beforehand, for easy reference, the following variant of..... • Therefore, whenever it is convenient, we may assume that..... • We identify $A$ and $B$ whenever convenient. • We shall, by convenient abuse of notation, generally denote it by $x_t$ whatever probability space it is defined on. • We shall find it convenient not to distinguish between two such sequences which differ only by a string of zeros at the end.

**conveniently** These are conveniently divided into three disjoint sets. • The proof conveniently splits into two cases.

**convention** This convention simplifies the appearance of results such as the inversion formula. • We adhere to the convention that $0/0 = 0$. • We adopt throughout the convention that compact spaces are Hausdorff. • We adopt the convention that the first coordinate $i$ increases as one goes downwards, and the second coordinate $j$ increases as one goes from left to right. • We make ⟨take⟩ the convention that $f(Q) = i(Q)$. • We maintain the convention that implied constants depend only on $n$. • Of course, this convention is respected in our definitions of convolution and inner product. • We regard (1) as a mapping of $S^2$ into $S^2$, with the obvious conventions concerning the point $\infty$. • By convention, we set $a(x, y) = 0$ if no such spaces exist. • This sort of tacit convention is used throughout Gelfand theory. • Here, in accordance with the usual summation convention, we sum over any index which appears as both a subscript and a superscript.

**converge** [*see also*: tend, approach] Then $F_n$ converges simply ⟨uniformly/weakly/weak$^*$/in the norm of $L^p$/in $L^p$ norm/in norm/in probability⟩.

**convergence** Moreover, one has estimates on the rate at which this convergence is taking place. • Addressing this issue requires using the convergence properties of Fourier series. • The convergence of the sum on the left is of course a weaker statement than the convergence of (2). • We give $X$ the topology of uniform convergence on compact subsets of $A$. • Almost everywhere convergence is the best we can hope for.

**converse** [of sth; to sth; *see also*: inverse, opposite, reverse] In this section we investigate under what conditions the converse holds. • The converse is far from obvious. • For the converse, consider..... • This theorem is a converse ⟨partial converse⟩ of Theorem 2.

**conversely** We have thus proved that (a) implies (b). Conversely, assume that (b) holds and define..... [NOT "Reciprocally, assume".]

**convert** [*see also*: transform, change into, turn into, make into] This isomorphism converts the shift operator to the multiplication operator. • The Fourier transform converts multiplication by a character into translation, and vice versa, it converts convolutions to pointwise products.

**convey** [*see also*: express, indicate] The main information conveyed by this formula is that $A$ cannot be.....

**convince** If nothing else, I hope to convince my readers that Segal's theorem deserves recognition as a profound contribution to Gaussian analysis.

**coordinate** There are $N$ vertices of the 24-cube which have a 1 in the $i$th coordinate and a total of five 1s. • We adopt the convention that the first coordinate $i$ increases as one goes downwards, and the second coordinate $j$ increases as one goes from left to right. • Now $X$ can be taken as coordinate variable on $M$. • This explains why we chose 9 rather than, say, 1 for the second coordinate. • Keep only those vertices whose coordinates sum to 4. • We see that the projection of $A$ to the first coordinate is all of $C$.

**core** [*see also*: essence, heart] At the core of our proof of Theorem 1 is a simple counting argument. • The main approach that has been developed for the latter purpose is Talagrand's growth functional machinery [T] that forms the core of the proof of Theorem 4.

**corollary** [to sth; of sth] To illustrate, let us state the following corollary. • That (2) implies (1) is the content of Corollary 3. • This corollary calls for some explanation and comment. • The rest of the proof goes through as for Corollary 2, with hardly any changes. • The significance of this fact for our purposes is captured by Corollary 3. • We will finish this section by offering a second application of our machinery (although in truth it is largely a corollary of the above).

**correct** [*see also*: true, valid, hold] Whether or not this is correct does not matter; we are trying to motivate the proof that follows.

**correctly** The only thing to check is that maps compose correctly; but this is an easy, if tedious, verification.

**correspond** [to sth; *see also*: accord, agree, match, respective] To every $f$ there correspond two functions $a$ and $b$. • Consider the differences between these integrals and the corresponding ones with $f$ replaced by $g$. • Let $v$ be an arbitrary control and $x_t$ the corresponding controlled process. [NOT "the respective process"; "respective" requires a plural noun.] • It seems appropriate to mention in passing the corresponding formula for the cohomology of $B_n$. • Corresponding to each choice of $V$ there is a function $f$ such that.....

**correspondence** Observe that $A$ is thereby put into one-to-one correspondence with $B$. • The elements of $C$ are in one-to-one correspondence with.....

**coset** Here $A$ is a coset of $H$ in $G$. [$H$ is a subgroup of $G$.]

**cost** [*see also*: expense, price] The latter hypothesis can be removed at the cost of an extra factor on the right hand side of (5).

**could** Where we could, we have chosen these examples from naturally occurring mathematical structures. [Note the double $r$ in *occurring*.] • The number of distinct values that could be in a memory cell is at most $s$. • This shows that $f$ could not have $n$ zeros without being identically zero. • Without losing any generality, we could have restricted our definition of integration to integrals over all of $X$. • It is possible that the methods of this paper could be used to....., but there remain considerable obstacles to overcome. • One might hope that in the particular case of the GL energy, this could be established, but we do not see an easy path to such a conclusion.

**count** **1** A quick count shows that $A$ has 36 points.
**2** Those more than half a square count as whole ones. • We shall thus avoid doubly counting the same contribution. • At the core of our proof of Theorem 1 is a simple counting argument. • the number of zeros of $f$ counted according to their multiplicities ⟨counted with multiplicity⟩

**counterexample** In addition to illustrating how our formulas work in practice, it provides a counterexample to Brown's conjecture. • For a counterexample, consider $S =$.....

**counterpart** This has the effect of making our theorems look less elegant than their counterparts in [KJ], but this seems to be the price to pay for complete generality.

**couple** **1** [*see also*: some, several] A couple of differences between this definition and the treatment of [KS] should be noted.
**2** [*see also*: combine] This follows immediately from (8) coupled with the fact that.....

**course** [*see also*: process] This paper was written in the course of the semester on..... • In the course of proof, we shall encounter..... • In the course of writing this paper we learned that P. Fox has simultaneously obtained results similar to ours in certain respects. • The prerequisite for this book is a good course in advanced calculus. [NOT "of advanced calculus"] • Then, of course, $F$ will be one-to-one. • Of course, before going further, we must check that such a $P$ exists. • The convergence of the sum on the left is of course a weaker statement than the convergence of (2).

**cover** [*see also*: accommodate, encompass, include] Note that (4) covers the other cases. • The only item that is not covered by the preceding discussion is (5), where the phrase "one may assume" needs explaining. • Then $P$ covers $M$ twofold.

**create** [*see also*: produce, generate, develop] All of the action in creating $S_{i+1}$ takes place in the individual cells of type 2 or 3.

**criterion** [*pl.* criteria] Part (c) is a frequently used criterion for the measurability of a real-valued function. • The criterion for its existence is $Af = 0$. • The following is an explicit criterion for $f$ to be hamiltonian. • Note that this lemma does not give a simple criterion for deciding whether a given topology is indeed of the form $T_f$. • The following result gives a criterion for when a point belongs to $B$.

**critical** [to sth; *see also*: basic, crucial, essential, key] In particular, $F$ is compact (a fact which was critical to our arguments in [6]). • However, with the recent advent of simulation based inference, the need for analytically tractable posteriors is no longer critical.

**cross** Let $M'$ be the minor obtained by crossing off the last row and column of $M$.

**crucial** [to sth; *see also*: basic, critical, main, principal, key] The following lemma, crucial to Theorem 2, is also implicit in [4]. • The main ⟨crucial/key⟩ ingredient in the proof of..... is.....

**crucially** However, the space $Z$ depends crucially on the particular ambient algebra $A$ chosen.

**crux** The crux of the matter is to control the sets $B_t$.

**cumbersome** [*see also*: heavy] We do not use (5) in our proofs, because it makes the notation more cumbersome. • However, for a general set $S$ of primes, this is cumbersome, so we will specialize to sets which are easier to deal with.

**curiously** But, curiously, the equivalence of (A) and (B) may fail.

**customary** [*see also*: common, familiar, usual] As is customary, we use $l^n$ for $C^n$ with the norm..... • If....., it is customary to write..... rather than..... • With the customary abuse of notation, the same symbol is used for both $F$ and its $r$-image.

**cut** [*see also*: reduce, diminish, decrease, lower] For size 1 this makes no difference, but for sizes 2 and 3 it considerably cuts down the number of cases to be considered.

## D

**danger** For brevity, and when there is no danger of confusion, we sometimes omit the superscripts.

**data** [*see also*: information, material, detail, evidence] The empirical data quite clearly indicate that we should expect proportions close to 3/4. [OR indicates] • A model for analysing rank data obtained from several observers is proposed. • for some set of input data

**date** **1** in about 1885; in the year 2000; as early as 1885; in Hilbert's 1905 paper; the revised 1993 edition; the seminal paper of Dixmier [D] of 1951. • The conference was held December 5–9, 2018 at Warsaw University. • The conference was held at Warsaw University (December 5–9, 2018). • The conference was held at Warsaw University, December 5–9, 2018. • The conference was held at Warsaw University from November 25 to December 9, 2018.
**2** The best known result to date has been obtained by Strang. • For a survey of what is known to date, see [G].
**3** In particular, $F$ is bounded (a result that dates back to a 1915 paper of Hadamard).

**deal** [with sth; *see also*: address, concern, consider, handle, take up, treat] To deal with $Tf$, we note that..... [= Regarding ⟨Concerning⟩ $Tf$, we note] • Although [1] deals mainly with the unit disc, most proofs are so constructed that they apply to more general situations. • It became clear that the Riemann integral should be replaced by some other type of integral, better suited for dealing with limit processes. • A survey of the research on $f_n(x, y)$ up to 1970 (most of it dealing with the case $n = 1$) was given in [3]. • Instead of dealing with lines one by one, we deal with collections of lines simultaneously. • This topic has been dealt with by many authors. • However, for a general set $S$ of primes, this is cumbersome, so we will specialize to sets which are easier to deal with.

**decay** These estimates only require that $f$ have a certain polynomial rate of decay at infinity.

**decide** [*see also*: determine, settle, tell] Note that this lemma does not give a simple criterion for deciding whether a given topology is indeed of the form $T_f$. • It becomes impracticable to compute the zeros of $F$ for degrees greater than 6; in any event, deciding whether the divisors found in this way represent irreducible curves becomes increasingly difficult. • In the event of a tie, the winner is decided by the toss of a coin.

**declare** We partially order $M$ by declaring $X < Y$ to mean that.....

**decline** **1** [*see also*: decrease] We observe the decline in the number of unemployed.
**2** [*see also*: decrease, diminish] The number of full-time staff has declined from 300 to just 50. • The suicide rate declined steadily from 1986 until 2000.

**decompose** [into sth; *see also*: split] If $H$ is decomposed in the form $H =$..... • Then $F$ can be decomposed according to the eigenspaces of $P$. • Note that $X$ decomposes into a direct sum of 2-planes.

**decomposition** a decomposition of $X$ into irreducible components

**decrease** **1** [*see also*: decline] There is also a decrease in clustering as $n$ increases, particularly for normally distributed $X$. • This decrease is offset by the contribution from the poles. • Profits in May show a modest decrease. • Note that a decrease in $b$ causes $f$ to increase.
**2** [*see also*: diminish, lower, drop, limit, reduce] We thus decrease $P(n)$ by 2. • After each comparison the index is decreased. • The left side of (3) obviously cannot decrease if $r$ increases.

**dedicate** [*see also*: devote] We can now formulate the problem to which the rest of this article is dedicated.

**deduce** [*see also*: conclude, find, infer, follow] To deduce (9) from (5), choose..... • At this stage we appeal to Theorem 2 to deduce that..... • The case when $f$ is decreasing can be proved similarly, or else can be deduced from..... • This theorem (and others in the paper) are deduced from a general result which, roughly speaking, says that.....

**deep** [*see also*: profound] It is hoped that a deeper understanding of these residues will help establish new results about the distribution of modular symbols. • This has deeper significance than one might first realize.

**default** Throughout, all rings are by default $k$-algebras.

**defer** [*see also*: postpone] Making use of a technical estimate, the proof of which is deferred to Section 3, we establish in Section 2 the estimates for..... • We defer the proof of the "moreover" statement in Theorem 5 until after the proof of the lemma.

**define** [*see also*: declare, let, set] To define $P_{n+1}$ from $P_n$, we let..... • We define a ⟨the⟩ function $f$ by setting $f = Tg$...... • We define the set $T$ to consist of those $f$ for which..... • We define a map to be simple if..... • Now $M$ is defined to be the set of all sums of the form..... • Here $F$ is only defined up to an additive constant. • Here $u^+$ and $u^-$ are the positive and the negative parts of $u$, as defined in Section 5. • As defined in Section 1, these are structures of the form..... • The function $f$ so defined satisfies..... • The notion of backward complete is defined analogously by exchanging the roles of $f$ and $f^{-1}$. • The fact that the number $T(p)$ is uniquely defined, even though $p$ is not, enables us to define the nullity of $A$ as follows. • The other two defining properties of a $\sigma$-algebra are verified in the same manner.

**definiteness** [*see also*: idea, specific] Here $Q$ can, for definiteness, be taken as $Ff$. • These extra stipulations are unimportant, but are given for definiteness.

**definition** We make the following provisional definition, which is neither general nor particularly elegant, but is convenient for the induction which is to follow. • With Lemma 2 in mind, we make the following ad hoc definition. • The preceding definitions can of course equally well be made with any field whatsoever in place of the complex field. • He proved the following theorem (see Section 2 for pertinent definitions). • The first of the above equalities is a matter of definition, and the second follows from (3). • Another way is to extend the definition of the index to closed curves by setting..... • Unravelling the above definitions, we obtain the following, more explicit description of $H(X)$. • Our definition agrees with the one in [3]. • The definition is legitimate ⟨correct⟩, because..... • This shows that the sequence (1) is bounded below, and so the definition of $L(f)$ is meaningful. • The precise definitions follow. • By definition, if $b = b^0(G,H)$ then the product variety contains a $G$-orbit of dimension $n$. • By definition of standard parabolic closure, in part (a) one has..... • [OR By the definition]

**definitely** [*see also*: certainly, surely] The theorem is definitely false without the assumption that....., as an inspection of Example 3 shows.

**degree** [*see also*: extent, level, stage] of degree at most $k$ • in some degree • to ⟨in⟩ a lesser degree • A number of authors have considered, in varying degrees of generality, the problem of determining..... • He received his master and PhD degrees from the University of Texas. • Let $ABC$ be an angle of sixty degrees. • The two lines intersect at an angle of ninety degrees. • This is the lattice packing rotated $45^o$. • a $180^o$ rotation

**delete** [*see also*: drop, omit, remove, dispense with] Note that there is a mistake on p. 3 of [5], where the condition..... should be deleted. • The quiver $Q_1$ is the same as $Q$ but with $x$ deleted.

**deliberately** [*see also*: intentionally, accidental] We deliberately write $SP(m)$—rather than $P(m)$—in the complex case, because..... • They defined the concept solely in terms of the norm of the Banach space, deliberately avoiding any extra structure.

**delicate** [*see also*: subtle, difficult, fine] The two examples, $E_1$ and $E_2$, differ by only a single sequence, $e$, and they serve to illustrate the delicate nature of Theorem 2. • To get around this delicate issue, we shall separate the variables $s$ and $u$.

**demand** **1** [*see also*: requirement, stipulation] The demand that each entry be a perfect square results in nine equations. [Note the subjunctive *be*.]
**2** [*see also*: require] Part 2 of the proof demands only that $k > 1$. • A computational restraint is the algebraic number theory involved in finding these ranks, which will typically be more demanding than in our example of Section 1.

**demonstrate** [*see also*: prove, show, establish, verify, display] The solution is not in $L(E)$ unless a stability condition is imposed, as was demonstrated in Example 3.

**denote** [*see also*: call, designate, write, set, symbol] Denote by $P$ the space of..... [NOT "Note $P$ the space of....." or "Denote $P$ the space of.....] • We let $T$ denote the set of..... • .....with $e_0$ denoting multiplication by $f$. • The wedge denotes that $e_i$ has been omitted. • Then we can find a subsequence (still denoted by $a_n$) such that $a_n < 1$ for all $n$. • This common value is called the $k$th stable homotopy group of the unitary group, denoted $\pi_k(U)$.

**depart** We depart from these previous works in our use of the nonergodic versions of the basic machinery. • In this chapter we shall depart from the previous notation and use the letter $m$ not for Lebesgue measure, but for Lebesgue measure divided by $(2\pi)^{1/2}$.

**depend** [on sth; *see also*: base, rely, rest] However, the space $Z$ depends crucially on the particular ambient algebra $A$ chosen. • Note that $O(g)$ depends on $g$ only through its differential $dg$. • We have to keep track of how the constant $K$ depends on the domain $D$. • We do not know how $V$ depends on the various choices made. • The answer depends on how broadly or narrowly the term "matrix method" is defined. • Up to equivalence it only depends on the pair $(f, g)$. • We divide them into three classes depending on the width of $k$. • The proof of (2) is a matter of straightforward computation, and depends on the relation $ab - cd = 1$. • These functions are sometimes called elementary factors. Their utility depends on the fact that..... • This depends on some heavy calculation with modular forms. • We split our proof into two cases depending on the homogeneity of the $C_i$.

**dependence** [*see also*: reliance] The holomorphic dependence of the integral on $l$ follows from (4). • For convenience we ignore the dependence of $f$ on $g$. • For simplicity, we suppress the explicit dependence on $x$ in the notation. • When there is no ambiguity we drop the dependence on $B$ and write just $Y_T$ for $Y_{T,B}$. • Strictly speaking, we should write something like $a(l, m, n)$ to reflect the dependence; we shall rely upon context instead. • We must now bring dependence on $d$ into the arguments of [9].

**dependent** An $i$-dependent lower bound is automatic by continuity.

**depict** [*see also*: illustrate] This graph is depicted in Fig. 1.

**depth** [*see also*: detail, expand, length] The sum of the depths is at most two-thirds of what it was before. • To get a sense of the depth of the conjecture, we consider what might at first glance be an elementary special case. • We now wish to discuss in some depth the problem of..... • See also [RS] for a more in-depth discussion on fields of definition of endomorphisms.

**derivation** Our approach provides an alternative derivation of the functional equation. • For our purposes here, the best way is to base the proof on the following theorem, a derivation of which can be found in [P].

**derive** [*see also*: obtain, originate] This is derived in Section 3 along with a new proof of Morgan's theorem. • In Section 2 the reader will be reminded of some important properties of Bernoulli numbers, and some auxiliary results will be quoted or derived. • However, we know of no way of deriving one theory directly from the other. • Here we consider a dual variational formulation which can be derived similarly to that for the sandpile model. • This term derives from "quiver", a notion used in representation theory of algebras. • Most of the proofs in this paper derive from those given by Fox for geometrically finite maps in [F]. • The inequality (2.4) is essentially contained in [LS] but will be rederived in Corollary 5 below.

**describe** [*see also*: account] Let $F$ be as just described. • As we let $t$ vary, $f(t)$ describes a curve in $M$. • It is interesting that (1) is a necessary condition in a much larger class of functions, which we now describe. • We describe how the notion of positivity relates to the other properties. • There are quite a number of cases, but they can be described reasonably systematically. • This is best described in terms of the group $G(M)$. • the process described • In (a) and (c), the $X$ described is called a diagonalization of $(X_n)$.

**description** [*see also*: account] In order to make our description of this process precise, we define..... [NOT "to precise our description"] • We give a fairly simple description of a wide class of averaging operators for which this rate of growth can be seen to be necessary. • Our aim here is to give some sort of 'functorial' description of $K$ in terms of $G$. • The following generators-and-relations description of $B(n, k)$ is shown in [3] to be equivalent to the definition given in [5]. • The description of $Q$ makes it evident that (3) holds. [Note that the *it* is necessary here.] • What is still lacking is an explicit description of $\ker C$. •

**deserve** A formula like (3) surely deserves some explanation. • As Corollary 2 shows, it is certainly a question deserving further exploration. • If nothing else, I hope to convince my readers that Segal's theorem deserves recognition as a profound contribution to Gaussian analysis.

**design** [*see also*: aim, intend] Condition (a) is so designed that $a(x) = 0$. • The definition of generator is designed to make the proof above work for $M = Z$.

**designate** [*see also*: denote, represent, call, name, term] This group will be designated by $E_3$ (not to be confounded with Euclidean 3-space). • Each $x$ here really designates the pair $(x, Ax)$.

**desirable** However, if $B$ were omitted in (1), the case $n = 0$ would imply $Nf = 1$, an undesirable restriction.

**desire** **1** [*see also*: aim, motivation] The present paper is motivated by the desire to make the subject as accessible as possible. • It seems that the relations between these concepts emerge most clearly when the setting is quite abstract, and this (rather than a desire for mere generality) motivates our approach to the subject.

**2** [*see also*: wish, want, require] Now $F$ is the desired lifting. • So $F$ must be constant on $H$, thereby showing that $A = B$, as desired ⟨claimed/required⟩. • Here $L$ can be taken as large as desired.

**despite** Despite its formulation below, the next fact is purely graph-theoretic in nature.

**detail** **1** [*see also*: depth, expand, fully, length, aspect] Unfortunately, the details of the calculations were omitted, and there is some doubt on whether the result is correct since our analysis suggests that $P_2$ must vanish to third order; the presence of $L^{-2}$ is also suspect. • In this section we discuss in some detail the relationship between..... • In more detail, the assertion is this: if..... • To go into this in detail would take us too far afield. • In detail the classification is complex, but in essence it is simple. • For more details we refer the reader to [4]. • We refer the reader to the body of the paper for details.

**2** [*see also*: extensive, thorough] In Section 4 we worked out a fairly detailed picture of linear $H$-systems. • A detailed exposition, more suited to the purposes of the present article, is given in [9]. • By detailed numerical calculation one may show that.....

**deteriorate** [*see also*: worsen] The estimate (3.5) deteriorates for fixed $N$ and increasing $M$.

**determine** [*see also*: decide, settle, tell] This normalization determines $V$ uniquely. • The function $f$ (initially defined on $C_0$) determines a functional on $S$. • ....., where $G$ is uniquely determined up to unitary equivalence ⟨up to an additive constant⟩. • Note that $f$ is determined only to within a set of measure zero. • The order of $G$ is completely determined by the assumption that..... • Over the past ten years the isomorphic structure of spaces of weighted holomorphic functions has been largely [= almost completely] determined. • We conclude that whether a space $X$ is an RG-space is not determined by the ring structure of $C(X)$. • The semigroup $F$

can be explicitly determined. • Let us now take a quick look at the class $N$, with the purpose of determining how much of Theorems 1 and 2 is true here.

**develop** [*see also*: build, construct, create, establish, work out, expand, grow] Kirk, building on work of Penot, developed a more abstract version of..... • Kearnes developed a commutator theory for relative congruences, with the expectation that it can be used to prove Pigozzi's conjecture. • This is most readily shown using the theory developed in Section 6. • In this subsection, we develop a formalism that will be used in the proofs of our main results. Here the functional-analytic tools required are simpler, but this easier setting allows us to develop some methods without undue worry about technicalities. • All the ideas for the paper were developed during discussions with Bosch and I thank him for generously sharing his ideas and encouragement.

**development** [*see also*: advance] Our development will require a detailed understanding of cozero covers. • We base our development on two properties of prolongation peculiar to this case. • An extensive development of this theory and its implications can be found in [T].

**device** [*see also*: method, means] This device makes it possible to replace multivalued functions by functions with..... • This simple device allows us to reach the same conclusion as in the $q$-convex case.

**devote** [*see also*: dedicate] Much of the rest of the paper is devoted to a general study of..... • Most of this book is devoted to proving this theorem. [NOT "devoted to prove"]

**diagram** Combining this with the attaching map defined above, we obtain the commutative diagram..... where surjectivity of the top-left arrow follows from the fact that..... • Thus we obtain a map $f : X \to Y$ which fits into the following commutative diagram:..... • The composition $f \circ g$ induces a linear embedding $F$ making the diagram commute.

**diameter** The support of $F$ has diameter not exceeding $l$. • a set with ⟨of⟩ diameter 1

**differ** [from sth; in sth; by sth; *see also*: vary] Apart from a few embellishments necessitated by some technical difficulties, the ideas differ very little from those used to prove Lemma 4. • The two functions differ at most on a set of measure zero. • The distributions $U$ and $V$ differ only ⟨merely⟩ by scale factors from the distribution $Z$. • We shall find it convenient not to distinguish between two such sequences which differ only by a string of zeros at the end. • Thus $F$ and $G$ differ by an arbitrarily small amount. • The two codes differ only in the number of their entries. • Then $f(x)$ and $f(y)$ differ in at least $n$ bits. • We produce an evolution equation which differs from (2.3) only in the replacement of the $F^2$ term by $F^3$. • If $A = B$, how does the situation differ from the preceding one? • This is the same as asking which row vectors in $R$ have differing entries at positions $i$ and $j$.

**difference** [*see also*: distinction, contrast] There is a marked difference between $X$ and $Y$. • One of the major differences between $F$ and $G$ is that..... • The difference between these maps is primarily in their kneading sequences. • The main difference from the case of finite coding trees is the presence of limits. • For size 1 this makes no difference, but for sizes 2 and 3 it considerably cuts down the number of cases to be considered.

**different** [from sth; *amer.* than sth; *see also*: distinct, other, various, several, particular] The case $a = 1$ requires a different approach. • The situation is quite different if we replace $H(U)$ by certain subclasses. • by using a somewhat different method • This idea is very little different from what can already be found in [2]. • Our solution is completely different from theirs. [NOT "much different"] • The notion of a $K$-unconditional basis is often defined in a slightly different way than we have done above. • There is another, entirely different, way to see that $A = B$. Namely, one can first show that..... • In the majority of applications, $K$ is an embedding. Our application is no different: the next result is obtained by letting $K$ be the embedding of.....

**differently** [*see also*: way] This terminology is used slightly differently in [KA]. • A further complication arises from 'BP', which works rather differently from the other labels. • Fox and Brown stated their result differently than we have, but the two formulations are equivalent.

**difficult** [*see also*: hard, complicated, complex, involved, intricate] When $r > 3$ things become much more difficult. • It becomes impracticable to compute the zeros of $F$ for degrees greater than 6; in any event, deciding whether the divisors found in this way represent irreducible curves becomes increasingly difficult. • This abstract theory is not in any way more difficult than the special case of the real line. • However, Nielsen rank is a notoriously difficult invariant to compute and little is known when $n > 2$.

**difficulty** [*see also*: complication, problem, trouble] We now indicate how that difficulty can be circumvented. • To get around ⟨overcome⟩ this difficulty, assume..... • The proof of Theorem 6 bypasses this difficulty. • We now indicate some of the inherent difficulties. • But this obvious attack runs into a serious difficulty. [NOT "a big difficulty"] • The most direct way is to take the $\pi_n$ to be Nielsen-inequivalent choices of generating sets, but this approach is fraught with [= full of] technical difficulties. • The analogue of Theorem 1 presents no difficulty. • The difficulty disappears entirely if we think of our functions as elements of $E$. • The only difficulty is in showing that..... • As $M$ is ordered, we have no difficulty in assigning a meaning to $(a, b)$. [NOT "difficulty to assign"] • The difficulty is that it is by no means clear what one should mean by a normal family. • The difficulty consists in generalizing (b). • Some such difficulty is to be expected. • The difficulties that prevented us from proving Theorem A in [BG] are overcome here using two new ideas. • The assumption that the test statistics are identically distributed can be relaxed without much difficulty.

**digit** the tens digit • the units digit

**digress** Let us digress to locate the need for relative ergodicity in the above arguments.

**dimension** This proves that the dimension of $S$ does not go below $q$. • Whenever the dimension drops by 1, the rank drops by at most $Z$. • The importance of these examples lay not only in lowering the dimension of known counterexamples, but also in..... [Note that the past tense of *lie* is *lay*, not "lied".] • However, $X$ does have finite uniform dimension. • A similar result holds in higher space dimension. • in dimension $n$ • Leray and Schauder laid the foundations for the generalization of the Lefschetz index to infinite dimensions. • a finite-dimensional space

**diminish** [*see also*: decrease, decline, lower, reduce, cut down] If any element is removed from an orthonormal set, its span is diminished. • As $n$ decreases, the class of such covers diminishes. • The dimension of a simplex is its cardinality diminished by 1.

**direct** [*see also*: straightforward] **1** Here is a simple direct proof. • This is handled by a direct case-by-case argument. • Tietze's theorem is a fairly direct consequence of Urysohn's lemma. • For direct constructions along more classical lines, see [KL].
**2** [*see also*: refer] We direct the reader to [Aus] for a more detailed discussion of this problem.

**direction** For the other direction, take..... • The "if" direction is trivial. • The major portion of one direction of the proof is contained in the previous proof. • The method of proof of Theorem B can be adapted to extend the right-to-left direction of Mostowski's result by showing that..... • We pause to record a generalization of Theorem 2 in a different direction. • Proceeding further in this direction, we obtain the following corollary. • Let $A$ denote the rectangle $B$ rotated through $\pi/6$ in a clockwise direction about the vertex $(0,1)$. • the derivative of $f$ at $x$ in ⟨the⟩ direction $v$ • a direction pointing downward with respect to $\tau$ • inequality in the opposite direction

**directly** [*see also*: straight] Let us now prove directly (without recourse to [5]) that..... • It should be possible to prove this directly by studying the fixed point set of the action of $G$. • They were defined directly by Lax [2], essentially as we have defined them. • In the remainder of this section, we study some properties of $K$, with the eventual aim (not realized yet) of describing $K$ directly using $G$.

**disadvantage** [*see also*: shortcoming, weakness, fail] Our method has the disadvantage of not being intrinsic. • A mild disadvantage of our quantile trees is that the prior to posterior computation is not analytically tractable.

**disagree** Our use of the derived tensor product implies that this definition can disagree with the ordinary Hochschild homology.

**disallow** Case 3 is disallowed since it results in a disconnected curve on $S$, contradicting the tightness of $P$.

**disappear** [*see also*: vanish] The difficulty disappears entirely if we think of our functions as elements of $E$. • One should remark that the ambiguity alluded to in Remark 3 disappears when talking about an affine field.

**disclose** [*see also*: reveal] It is appropriate to highlight McCann's contribution whose 1994 thesis disclosed the relevance of convex gradients to geometric inequalities.

**discover** [*see also*: find, learn] Thorin discovered the complex-variable proof of Riesz's theorem. • This strikingly simple proof was discovered by J. Dixon. • In Section 3 we obtain some results that we discovered in the process of trying to prove Theorem 2.

**discuss** [*see also*: consider] In this section we discuss in some detail the relationship..... • This is discussed more fully in [5]. • These Banach algebras have been much discussed recently. • We put off discussing this problem to Section 5. • Rather than discuss this in full generality, let us look at a particular situation of this kind. • the problem discussed [NOT "the discussed problem"]

**discussion** [*see also*: consideration, examination, study, treatment] We now turn to a brief discussion of another concept which is relevant to John's theorem. • We direct the reader to [Aus] for a more detailed discussion of this problem. • We summarize some of its main properties, borrowing from the elegant discussion in Henson's article. • The only item that is not covered by the preceding discussion is (5), where the phrase "one may assume" needs explaining. • Of course, it is tacitly understood that it is this measure that is really under discussion. • See [KT] for discussion of this technical point. • See also [B, Sect. 5] for further discussion. • We have benefited greatly from discussions with many people, including..... • a detailed ⟨full/in-depth/brief/preliminary⟩ discussion • All the ideas for the paper were developed during discussions with Bossh and I thank him for generously sharing his ideas and encouragement.

**disjoint** [from sth; *not*: "with sth"] This means that all intervals we consider are either contained in $V$ or disjoint from $V$.

**disparate** [= clearly different] The approach in [GT] provides a unified way of treating a wide variety of seemingly disparate examples.

**dispense** [with sth; *see also*: remove, drop, delete, omit] The following example shows that condition (2) cannot generally be dispensed with if $V$ is to be continuous. [= cannot be discarded]

**display** [*see also*: demonstrate, exhibit, show, indicate] Iterated correspondences display many of the features of..... • Table 1 displays the median quantile of the number of misclassified tumor samples for each classifier. • the second displayed equation of the proof

**disprove** The conjecture will be disproved by exhibiting.....

**disregard** [*see also*: ignore, neglect] In the following, the errors of truncation will be disregarded.

**distance** [from A to B; between A and B; *see also*: away] the set of points with ⟨at⟩ distance 1 from $K$ • the set of points at a distance less than 1 from $K$ • Hence $A$ and $B$ are at distance precisely $d$. • Consider a pair of points $a$, $b$ at distance 1. • The point $p$ is within distance $d$ of $X$. • Their centres are a distance at least $N$ apart. • Any point not in $B$ is moved by $f$ a distance equal to twice the distance to $M$. • If we stay a fixed distance off the critical line, we do not expect Benford behaviour.

**distinct** [*see also*: different] a sequence of distinct complex numbers • The number of distinct values that could be in a memory cell is at most $s$. • However, only five of these are distinct. • This book is divided into two distinct parts.

**distinction** [*see also*: difference] The distinction between these two realizations lies in the treatment of..... • We shall proceed without making explicit distinctions between the two types of convergence. • In stating our results for a classical group $G$, we make a distinction between the primitive actions of $G$ and those in which the stabilizer is irreducible. • There is only a fine distinction between the two schemes.

**distinguish** [*see also*: set apart] The Knaster continua are distinguished by the property that..... • Thus the cases in (8.5) are distinguished by whether $a = b$ or $a < b$. • Generally we add a tilde to distinguish between quantities associated with $\tilde{G}$ and those associated with $G$. • We shall find it convenient not to distinguish between two such sequences which differ only by a string of zeros at the end. • We do not usually distinguish notationally between a structure and its underlying set. • Where it is important to distinguish different norms on $E$, we shall use the notation..... • An arc is oriented if it has one of its endpoints distinguished as the "starting" point and the other as the "finishing" point. • Throughout the proof, $E(n)$ (as distinguished from $E(n, A)$) denotes the energy without the field (5.1). • Functions which are equal almost everywhere are indistinguishable as far as integration is concerned.

**distribute** The error is multinomially distributed with mean zero and covariance matrix $A$. • The $C^r(k)$ are distributed like $C^r$. There is also a decrease in clustering as $n$ increases, particularly for normally distributed $X$.

**distribution** The random variable $X$ has the Poisson distribution with mean $v$. • Now $X$ has a normal $N(0, 1)$ distribution. • Let $S_n$ have the binomial distribution with parameters $n$ and $p$. • Then $C$ is a discrete random variable with the binomial distribution. • It is intuitively clear that the amount by which $S_n$ exceeds zero should follow the exponential distribution.

**divide** The proof will be divided into a sequence of lemmas. [NOT "divided in a sequence"] • Next divide $J$ in half. • On dividing through by $f$, we see that.....

**do** [*see also*: make] We shall do this by showing that..... • As the space of Example 3 shows, complete regularity of $X$ is not enough to allow us to do that. • We can do a heuristic calculation to see what the generator of $x_t$ must be. • For general $\mu$, we need to do some extra work. • This is done to simplify the notation. • For binary strings, the algorithm does not do quite as well. • Recent improvements in the HL-method enable us to do better than this. • In fact, we can do even better, and prescribe finitely many derivatives at each point of $M$. • A geodesic which meets $bM$ does so either transversally or..... • We have not required $f$ to be compact, and we shall not do so except when explicitly stated. • This will hold for $n > 1$ if it does for $n = 1$. • Consequently, $A$ has all geodesics closed if and only if $B$ does. • In contrast to the previous example, membership of $D(A)$ does impose some restrictions on $f$. • We may (and do) assume that..... • The statement does appear in [3] but there is a simple gap in the sketch of proof supplied. • Only for $x = 1$ does the limit exist. • In particular, for only finitely many $k$ do we have $F(a_k) > 1$. [Note the inversion after *only*.] • In doing this we will also benefit from having the following notation. • This undoubtedly has to do with the assumption about the growth of $f$.

**document** Since most of the results presented are quite classical (the novelty lies in the arrangement, and some of the proofs are new), I have not attempted to document the source of every item.

**dominate** [*see also*: bound, estimate] The right hand side is dominated by $2M$.

**doomed** [= certain to fail; *see also*: futile] This attempt is doomed because the homogeneity condition fails to hold.

**double** [*see also*: twice] The constant $C$ may be taken as double the constant appearing in (5).

**doubly** We shall thus avoid doubly counting the same contribution.

**doubt** The only points $(z, w)$ at which the continuity of $g$ is possibly in doubt have $z = 0$. • Unfortunately, the details of the calculations were omitted, and there is some doubt on whether the result is correct since our analysis suggests that $P_2$ must vanish to third order; the presence of $L^{-2}$ is also suspect.

**down** The labour participation rate in 2014 is down to 63% from 66% in 2013. The numbers inserted in $L$ must increase strictly down each column. • This accords with the intuition that as we pass down the coding tree, we find out more and more detailed information about the ordering actually represented. • We show that..... by reverse induction on $i$, starting at $i = n$ and working down to $i = 0$. • Thus, everything comes down to proving the existence of $M$. • For size 1 this makes no difference, but for sizes 2 and 3 it considerably cuts down the number of cases to be considered. • Both theorems appear to be folklore—see Cowling [11]—but we have been unable to track down complete proofs. • Important analytic differences appear when one writes down precisely what is meant by.....

**downward(s)** We adopt the convention that the first coordinate $i$ increases as one goes downwards, and the second coordinate $j$ increases as one goes from left to right. • In other words, $X[1]$ is $X$ with its degrees shifted downward by $\lambda$. • a direction pointing downward with respect to $\tau$ • [Note that *downward* and *downwards* can be used without distinction as adverbs, but the standard form of the adjective is *downward* (e.g., *in a downward direction*).]

**draft** The author thanks H. Miller for a careful reading of an earlier draft. • The author gratefully acknowledges the referee's helpful comments pertaining to the first draft of this paper.

**draw** This figure is drawn to a scale of one to ten. • The picture on the right shows the dividing line $\alpha$, drawn thick. • For visual convenience, $\delta_1^1$ edges are drawn in blue. • The basis element $E_B$ is drawn using solid dots and the basis element $S_B$ is drawn using hollow dots. • The proof shows that if the points are drawn at random from the uniform distribution, most choices satisfy the required bound. • We shall draw heavily on ideas from [3].

**drawback** A drawback to Pólya trees, and perhaps the main reason why they have not seen much application within the Bayesian nonparametric literature, is that an arbitrary partition tree needs to be specified.

**drop** [*see also*: decrease, decline, down, reduction, omit, remove, delete, dispense with] Whenever the dimension drops by 1, the rank drops by at most $Z$. • The temperature dropped ten degrees. • It follows that $E_n$ does not drop below the order of $n^4$. • The unemployment rate dropped to 6% in January from 7% in November. • For brevity, we drop the subscript $t$ on $h_t$. • We drop the subscript when confusion is unlikely. • When there is no ambiguity we drop the dependence on $B$ and write just $Y_T$ for $Y_{T,B}$. • We show that one can drop an important hypothesis of the saddle point theorem without affecting the result. • Note that we can drop the factor of 1/2 by Lemma 3. • This term drops out when $f$ is differentiated.

**due** Observe that $A$ is a vector space. This is due to two facts:..... • We have $F = G = H$, the last equality being due to the fact that..... • Theorems 1 to 3 are classical results, due to Lebesgue. • This proof is due to R. P. Boas. • [In the above examples, *due* is an adjective; the use of 'due to' as a preposition meaning 'because of', e.g. "Due to Theorem 5, this map is bounded", although quite common, is considered incorrect by some native speakers of English.]

**duration** For the duration of this proof only, let us write $E_X$ to denote.....

**during** We may require that the point $P$ lie in one of the trees constructed before or during the $i$th stage of the induction.

## E

**each** [*see also*: all, any, every] Then $F$ is bounded on each bounded set. • Each of these three integrals is finite. • These curves arise from....., and each consists of..... • There remain four intervals of length 1/4 each. • Here $X$ assumes values $0, 1, ..., 9$, each with probability 1/10. • Then $F_1, ..., F_n$ vary each in the interval $[0, 1]$. • The first and third terms are each less than $\varepsilon/3$. • a progression each of whose terms can be written as..... • These $n$ disjoint boxes are translates of each other. • The two notions of rank are independent of each other.

**ease** [*see also*: simplicity] **1** We note that the assumption of GCH is made for convenience and ease of presentation.

**2** Furthermore, adopting this strategy considerably eases constructing a coding tree from a linear order.

**easily** One easily checks that whenever a sequence $a_n$ obeys the uniform bound $a_n < C$, one has..... • The series can easily be shown to converge. • This can be easily reformulated in purely geometric terms. • However, as we are about to see, this complication is easily handled. • The passage from bounded $f$ to general $f$ is easily effected. • It is easily seen that..... • The hypotheses of [4] are different, however, and do not seem to adapt easily to the time-inhomogeneous case.

**easy** [*see also*: simple, straightforward, elementary] A stronger topology makes it easier for a given function to be continuous. • It is almost as easy to find an element such that..... • The other inequality is just as easy to prove. • It will be convenient to state beforehand, for easy reference, the following variant of..... • It is an easy matter to use Theorem 10 to construct all manner of interesting Peano continua [= continua of different kinds]

**effect** **1** [*see also*: consequence, result, outcome, influence] This map will be shown to be in $M$ by examining its effect on $B$. • We must take account of the fact that $A$ may have a substantial effect on the input length. • One might expect that the effect of conditioning$P(\cdot)$ on $\{\tau_D > t\}$ would be most pronounced when $x$ is near $\partial D$. • The effect of Theorem 3 is to reduce the number of variables in the argument by 1. • We can immediately use one of these poles to cancel out ⟨compensate for⟩ the effect of the pole at $s = 0$. • Offsetting the effect of the pole at $t = 0$ requires more work. • This has the effect of making our theorems look less elegant than their counterparts in [KJ], but this seems to be the price to pay for complete generality. • An analogous situation to the one considered in this paper has been studied, to great effect, by Dasgupta and his coauthors. • Conjecture 2 of [KH], to the effect that [= meaning that] there is no relation $P$ with $E(P) = 1$, still remains open.

**2** We first prove the (rather simpler) Theorem 7, by effecting a quite general reduction of the problem to the study of certain isotropy factors. • The passage from bounded $f$ to general $f$ is easily effected.

**effective** [*see also*: successful] This provides an effective means for computing the index.

**effectively** It is obvious that the above theorem supplies an algorithm to effectively recognize whether $SP$ is in $A$.

**effectiveness** This procedure, once implemented, can thereafter be applied with great effectiveness.

**effort** [to do sth; at doing sth; of doing sth] It is also clear that there are extensions to....., but they do not seem to be worth the effort of formulating them separately. • In an effort to generalize Robert's method, we gave in [2] the following criterion for non-finite generation of kernels. • The first of these was suggested by J. Serrin, who showed how to modify my earlier treatment of $J(X)$ so as to obtain stronger results with no extra effort.

**either** [*see also*: both] In either case, it is clear that..... [= In both cases] • Now equate the coefficients of $x^2$ at either end of this chain of equalities. • By Corollary 2, distinct 8-sets have either zero, two or four elements in common. • Each $f$ can be expressed in either of the forms (1) and (2). • The two classes coincide if $X$ is compact. In that case we write $C(X)$ for either of them. • Either $f$ or $g$ must be bounded. • Any map either has a fixed point, or sends some point to its antipode. • There is no infinite-dimensional subspace of $E$ either disjoint from or entirely contained in $A_0$. • But $B$ is not divisible, hence $C$ cannot be divisible either.

**elaborate** [*see also*: complicated, intricate] Zilber has a more elaborate definition of this notion, but in fact his extra conditions are redundant. • One reason for using this rather elaborate model is that it permits a simple and concrete definition of the realization.

**elegant** We make the following provisional definition, which is neither general nor particularly elegant, but is convenient for the induction which is to follow. • We summarize some of its main properties, borrowing from the elegant discussion in Henson's article. • This has the effect of making our theorems look less elegant than their counterparts in [KJ], but this seems to be the price to pay for complete generality.

**element** [*see also*: member, ingredient, feature, detail] We shall call the elements of such a chain *links*. • Computing $f(y)$ can be done by enumerating $A(y)$ and testing each element for membership in $C$. • Two consecutive elements do not belong both to $A$ or both to $B$. • a 3-element set

**elementary** [*see also*: easy, simple, straightforward, basic, primary] It is an elementary check that $A$ is a vector space. • However, shortly after learning about Wiener's work, P. Lévy found a more elementary argument. • By elementary algebra, we can show that.....

**eliminate** By repeated squaring to eliminate the radicals in this equality, we obtain.....

**else** The case when $f$ is decreasing can be proved similarly, or else can be deduced from..... • We now exploit the relation (15) to see what else we can say about $G$. • Little else is known about the Klein property in this class of spaces. • If nothing else, I hope to convince my readers that Segal's theorem deserves recognition as a profound contribution to Gaussian analysis.

**elsewhere** Define $A$ to be the matrix with 1 in the $(i, j)$ entry and 0 elsewhere.

**embed** [*or*: imbed; in/into sth] The correspondence $f \mapsto Af$ embeds $F$ as a closed ideal in $G$. • The next lemma shows how such a semilattice looks when embedded in a larger compact semilattice.

**embedding** [*or*: imbedding; of $X$ in/into $Y$]

**embrace** [*see also*: include, cover] This study embraces a number of interesting aspects of the theory.

**emerge** [*see also*: arise, occur, result] It seems that the relations between these concepts emerge [= become apparent] most clearly when the setting is quite abstract, and this (rather than a desire for mere generality) motivates our approach to the subject. • The true power of Theorem 3 begins to emerge when we see that (5) implies Young's inequality.

**emphasis** [*see also*: stress] In this paper, emphasis is on the case where..... • However, the connection with Gromov's work has been obscured in recent years by an emphasis (in the algebraic topology literature) on configuration spaces. • We add the word 'positive' for emphasis. • In his Stony Brook lectures, he laid great emphasis on the use of..... • considerable ⟨increased/particular/special/strong/main⟩ emphasis

**emphasize** [*see also*: stress, underline, underscore, highlight] When it is necessary to emphasize one particular coordinate, we write..... • Let us emphasize that $K$ was *not* assumed to be connected in Theorem 4. • Our presentation is therefore organized in such a way that the analogies between the concepts of topological space and continuous function, on the one hand, and of measurable space and measurable function, on the other, are strongly emphasized.

**employ** [*see also*: apply, use, utilize] In discussing structures, we shall employ the standard terminology of first-order logic. • The condition..... can be improved by employing a strategy similar to that underlying the proof of Theorem 2. • In this section we employ a version of the Brown inequality to estimate $N_k$.

**enable** [sth; sb to do sth; *see also*: allow, permit, possible] Repeated application of Lemma 2 enables us to write..... [OR enables one to write; *not*: "enables to write"] • Also, wherever possible, we work with integer coefficients, enabling us to obtain information about torsion. • In fact, there is a trick which enables one to reduce the time dependent case on $R^n$ to the time independent case on $R^{n+1}$. • This enables discontinuous derivations to be built.

**encircle** The curve $C$ encircles the origin twice.

**encode** The differential $\delta^1$ on $X$ is encoded schematically in a $3 \times 3$ matrix.....

**encompass** [*see also*: cover, include] Our notion of nonanalytic integral encompasses such well known examples as..... • We begin by extending Construction 2.1 to encompass $B$-algebras.

**encounter** [*see also*: meet, come across, run into] However, we immediately encounter the problem of nonregularity of the data. • We shall encounter similar situations again, and shall apply convergence theorems to them without further comment.

**encourage** The results have been encouraging enough to merit further investigation. • We encourage the reader unfamiliar with techniques from the theory of..... to consult [BS].

**end** **1** [*see also*: aim, purpose] At the end of Section 2, we prove..... [NOT "In the end of"] • Now $F$ is defined to make $G$ and $H$ match up at the left end of $I$. • We shall find it convenient not to distinguish between two such sequences which differ only by a string of zeros at the end. • To this end, we first consider..... [= For this purpose; *not*: "To this aim"] • Thus in the end $F$ will be homogeneous. [= finally]

**2** [*see also*: conclude, finish, terminate] The path ends at $x$. • The word ends in $a$. • a word starting with $a$ and ending with $b$ • The exact sequence ends on the right with $H(X)$. • We end this section by stating without proof an analogue of..... • To end this section, let us briefly summarize the main difficulties encountered. • Arguing as before, we shall end up with a simple tree all of whose facets contain $V$.

**enhance** [*see also*: improve, increase] It should be possible to enhance the above theorem further by allowing an arbitrary locally compact group $L$. • The usefulness and interest of this correspondence will of course be enhanced if there is a way of returning from the transforms to the functions, that is to say, if there is an inversion formula.

**enjoy** However, not every ring enjoys the stronger property of being bounded. • On the other hand, as yet, we have not taken advantage of the basic property enjoyed by $S$: it is a simplex.

**enlarge** This paper enlarges the class of continua with this property, namely to include those which.....

**enough** [*see also*: suffice, sufficient, sufficiently] Choosing $n$ small enough that $na < 1$ gives the estimate..... • This class is wide enough to include a number of examples of interest. • The preceding proof contains a result which is interesting enough to be stated separately. • Essentially, the conditions placed on $A$ serve to ensure that $B$ is 'free enough' for the definition of $G$ to work. • Put this way, the question is not precise enough. • It is therefore enough to show that..... • It is also enough to consider only real $m$. • But this time boundedness on $U$ is enough; we do not need continuity on $V$. • ....., which, by another theorem of Kimney's, is more than enough to guarantee that $P$ gives $A$ outer measure 1. • As the space of Example 3 shows, complete regularity of $X$ is not enough to allow us to do that. • Repeating this procedure enough times gives.....

**enquire** It is also natural to enquire about how factorization and interpolation interact at the level of particular families of inequalities.

**ensuing** [= following; *see also*: subsequent, succeeding] The idea of the ensuing computations is the following:.....

**ensure** [*see also*: guarantee] Theorem 3 is remarkable in that considerably fewer conditions than in the previous theorems ensure universality. • The hypothesis $n > 1$ ensures that Lemma 2 is applicable. • Essentially, the conditions placed on $A$ serve to ensure that $B$ is 'free enough' for the definition of $G$ to work.

**entail** [*see also*: involve, necessitate, require, necessarily, result] The analogous construction when $A$ is not affine entails the following subterfuge. [= requires the following trick] • This entails that some smoothness assumptions will have to be made. • Note that Theorem 2 entails in particular that a unital elementary operator of length at most two is injective.

**enter** Here $G$ enters essentially in an algebraic way. • This first construction explains how weak $H$-homomorphisms enter the picture. • If the line segment $L$ does not enter the interior of $A$, then neither does $L'$.

**entire** [*see also*: whole, complete, full, total] Since the entire argument is based solely upon assumption (6.1), the conclusion of the theorem must hold.

**entirely** [*see also*: completely, fully, wholly] The difficulty disappears entirely if we think of our functions as elements of $E$. • Each component which meets $X$ lies entirely within $Y$. • There is another, entirely different, way to see that $A = B$. Namely, one can first show that..... • Since $H \in F$, it follows that $K$ is not contained entirely within any $H_i$.

**entry** Define $A$ to be the matrix with 1 in the $(i, j)$ entry and 0 elsewhere. • Take $A$ to be the matrix with all entries zero except for $i - j$ at $(i, j)$.

**enumerate** [*see also*: list] There is not space to enumerate them all here. • Computing $f(y)$ can be done by enumerating $A(y)$ and testing each element for membership in $C$.

**enumeration** Let $r_1, r_2, \ldots$ be an enumeration of the rationals in $[0, 1]$. • The main result of the first part of the paper is a complete enumeration of such forms.

**envisage** Even though more general probabilistic constructions could be envisaged [= contemplated], we focus on those schemes where.....

**equal** **1** Then $A$ equals $B$. [= $A$ is equal to $B$; *not*: "$A$ is equal $B$"] • The degree of $P$ equals that of $Q$. • Now $J$ is defined to equal $Af$, the function $f$ being as in (3). [= where the function $f$ is.....] • Therefore this condition is equivalent to the correlation equalling $1 - B$.
**2** The resulting metric space consists precisely of the Lebesgue integrable functions, provided we identify any two that are equal almost everywhere.

**equality** Equality holds ⟨occurs⟩ in (9) if..... • ....., with equality if $a = 1$. • There is equality if $a = 1$. • Equality is achieved only for $a = 1$. • Then $a \le b \le c \le a$. We therefore have equality throughout. • The relation becomes an equality if the $w_i$ form an orthonormal basis.

**equally** [*see also*: just] But $H$ itself can equally well be a member of $S$. • The method applies equally well to certain other error terms. • All inputs of size $n$ are equally likely to occur. • However, as observed in [5], the proof given in [7] is equally valid for regular sets.

**equate** [sth (*pl.*); sth to sth] Equating coefficients we see that..... • Equating the coefficient of $x^2$ in $V$ to zero, we get..... • Now equate the coefficients of $x^2$ at either end of this chain of equalities.

**equation** Equation (2) now reads $Ax =$..... • We can solve the resulting equations successively for $c_1, ..., c_n$. • [Do not overuse "equation" for expressions without equality sign; use *estimate*, *inequality*, *formula*, *relation* etc. instead.]

**equip** [sth with sth] The algebra $D(F)$ comes equipped with a differential $d$ such that $H(d) = 0$.

**equivalent** [to sth; to doing sth; *see also*: tantamount] This is equivalent to requiring ⟨saying⟩ that..... • Therefore this condition is equivalent to the correlation equalling $1-B$. • The following three statements are equivalent:..... • For this it is sufficient to check that $x$ is in $V$, or, what is equivalent, that $a(x)$ is bounded. • Many equivalents are known for this property.

**equivalently** Thus $F$ can be equivalently defined as $F =$..... • Then $f = g$, or equivalently $a(f) = a(g)$. • Firstly, if $G$ is abelian, does it follow that $S(G) = K$, or equivalently, that $X_G = p(M(G))$?

**erroneous** [*see also*: fallacious, invalid] Our main finding in this paper is that this intuition turns out to be erroneous.

**error** [*see also*: mistake] The equations are satisfied with error at most $O(n)$. • The saddle-point conditions are satisfied up to an error $o(n)$. • We take this opportunity to correct a minor error in Lemma 2 of [PS]. • Unfortunately, there is a simple but serious error in the final step of the proof. • a common ⟨elementary/fundamental/important/major/small/insignificant⟩ error

**especially** [*see also*: notably, particularly, particular] This may appear rather wasteful, especially when $n$ is close to $m$, but these terms only give a small contribution to our sum. • An especially interesting case occurs when.....

**essence** [*see also*: core, substance, nature, point, heart] We appeal to the following lemma, the essence of which is taken from [H]. • In detail the classification is complex, but in essence it is simple.

**essential** [*see also*: basic, critical, crucial, key] Essential to the proof are certain topological properties of $G$. • The assumed positivity of $u_n$ is essential for these results. • We shall not use this fact in any essential way.

**essentially** [*see also*: basically, largely, mostly, mainly] The operator $P$ satisfies essentially the same inequality as does $F$. • Even in the case $n = 2$, the application of Theorem 6 gives essentially nothing better than the inequality..... • Here $G$ enters essentially in an algebraic way. • We conjecture that in the general case refinements of the above ideas will essentially still work to give similar results. • They were defined directly by Lax [2], essentially as we have defined them. • Essentially, the conditions placed on $A$ serve to ensure that $B$ is 'free enough' for the definition of $G$ to work.

**establish** [*see also*: prove, show, demonstrate, set] We need only establish (8) for intervals of the form..... • They established the Hasse principle subject to a rank condition on the coefficients. • To establish uniqueness, suppose..... • This establishes (i). • The problem now reduces to establishing that..... • One might hope that in the particular case of the GL energy, this could be established, but we do not see an easy path to such a conclusion.

**establishment** We now work toward the establishment of properties (A) to (D).

**estimate** **1** We now give an estimate for..... in terms of..... • Moreover, one has estimates on the rate at which this convergence is taking place. • The weight satisfies a weak type $(1, 1)$ estimate. • a crude ⟨rough/sharp/precise⟩ estimate
**2** [*see also*: bound, dominate, assess] To estimate $F$ from above ⟨below⟩, consider..... • Now we can estimate for how many elliptic curves of height up to $H$ the event occurs.

**estimation** [*see also*: estimate] Theorem 3 can be applied to the estimation of $b_k$. • The remainder of the estimation is largely as before with $B$ replaced by $C$. • His methods of estimation are quite different from ours. •

**even** Actually, the proof gives an even more precise conclusion:..... • Nevertheless, it might be possible to make sense of (2) even for noninjective $V$ by considering a multi-valued operator $Z$. • In [2] Marx et al. make the surprising observation that the convolution may not even be once differentiable if we replace 'continuously differentiable' by 'differentiable'. • This is true even if $H^2(B) = 0$, as evidenced by the existence of manifolds whose affine base is a Klein bottle. • Even though we were able to derive a formula for....., it is not easy to use. • The fact that the number $T(p)$ is uniquely defined, even though $p$ is not, enables us to define the nullity of $A$ as follows.

**event** [*see also*: case] Now we can estimate for how many elliptic curves of height up to $H$ the event occurs. • It becomes impracticable to compute the zeros of $F$ for degrees greater than 6; in any event, deciding whether the divisors found in this way represent irreducible curves becomes increasingly difficult. • In the event of a tie, the winner is decided by the toss of a coin.

**eventual** [= occurring at the end; ≠ possible; *see also*: ultimate, final] It is impossible to predict the eventual outcome of the process. • The eventual aim is to obtain a closed form expression for $F$. • In the remainder of this section, we study some properties of $K$, with the eventual aim (not realized yet) of describing $K$ directly using $G$.

**eventually** [= in the end; ≠ possibly] The iterates eventually reach the value 1. • Then we can find some net $(s_k)$ which eventually leaves every compact subset of $G$. • It will eventually appear that the results are much more satisfactory than one might expect. • an eventually increasing sequence

**ever** The question of whether $B$ is ever strictly larger than $A$ remains open.

**every** [*see also*: all, any, each, arbitrary] To every $F$ there corresponds a unique..... • For every $g$ in $X$ ⟨not in $X$⟩ there exists an $X$..... [*But*: for all $f$ and $g$, for any two maps $f$ and $g$; *every* is followed by a singular noun.] • Every invariant subspace is of the form..... • [Do not write "Every subspace is not of the form....." if you mean *No subspace is of the form.....*; *every* has to be followed by an affirmative statement.] • However, not every ring enjoys the stronger property of being bounded. • Every possible such sequence gives rise to..... • The generally accepted point of view in this domain of science seems to be changing every few years.

**everywhere** Functions which are equal almost everywhere are indistinguishable as far as integration is concerned. • Here are some other situations in which we can draw conclusions only almost everywhere. • Almost everywhere convergence is the best we can hope for.

**evidence** **1** [*see also*: proof, data, material, fact] There is no evidence to the contrary. • The fact that such a bias has been observed experimentally is further evidence that the methodology of basing conclusions on the distribution of $P$ is reasonable. • Computer evidence suggests the dynamics of these maps is rich and varied. • Some partial evidence to support this conjecture is discussed in [3]. • We offer numerical evidence to support a conjecture that there exist infinitely many primes of this type.
**2** [*see also*: show, prove] This is true even if $H^2(B) = 0$, as evidenced by the existence of manifolds whose affine base is a Klein bottle.

**evident** [*see also*: clear, obvious, plain] From this previous work, it was not at all evident that there would be some covering or noncovering properties which would be preserved by one of these kinds of extensions. • The description of $Q$ makes it evident that (3) holds. [Note that the *it* is necessary here.]

**evidently** [*see also*: clearly, manifestly, obviously] The algebraic properties (i) and (ii) required of $j$ are evidently true.

**exact** This is an exact analogue of Theorem 1 for closed maps. • From the viewpoint of the Fox theorem, there is not an exact parallel between the odds and the evens.

**exactly** [*see also*: precisely] Actually, [3, Theorem 2] does not apply exactly as stated, but its proof does. • The function $F$ vanishes to order exactly $n$ at zero.

**examination** [*see also*: check, consideration, discussion, inspection, scrutiny] An examination of the argument just given reveals that this is all we have used. • Examination of the left and right members of (1) shows that.....

**examine** [*see also*: study, explore, analyse, investigate, look] Examining how the Lipschitz constant depends on $F$, we find that..... • The algorithm examines only roughly one-quarter to one-third of the characters. • By carefully examining the relations between the quantities $U_i$, we see that.....

**example** [*see also*: illustration, exemplify] To see an example, set..... • As an example, let..... • For another example, consider a finite language..... • Here is an example of..... • An explicit example is two planes through the origin. • This can obviously happen for some $X$: examples are $c_0$ and $l^1$. • We can make this clear with the following example. • Before we move on to our main theme, we shall illustrate our techniques by an example of an isometric elementary operator. • Before beginning the proof, which is notationally complicated, we first illustrate the strategy in an example. • The simplest example of this is furnished by..... • We now describe a more interesting example featuring an operator that is non-trivially supercyclic. • It is easy to see, by means of an example, that..... • Show by an example that a $P$-system need not be a field. • Examples are given to show that..... • Examples abound in which $P$ is discontinuous. • Examples of Hrushovski classes of finite structures include the following:.....

**exceed** [*see also*: outnumber, surpass] The degree of $F$ exceeds that of $G$ by at least 4. • The support of $F$ has diameter not exceeding $l$. • It is intuitively clear that the amount by which $S_n$ exceeds zero should follow the exponential distribution. • Define $a_k$ to be the probability that exactly $k$ out of the $2n$ values $X_i$ exceed $T$, conditional on $X_0 > T$.

**except** [*see also*: apart from, besides] **1** for all $n$ except a finite number • for no $x$ except the unique solution of..... • [Note the difference between *besides*, *except* and *apart from*: *besides* usually 'adds' something, *except* 'subtracts', and *apart from* can be used in both senses; after *no*, *nothing* etc., all three can be used.] • Then $G$ is differentiable except for a jump at $x = 0$. • Except for these two lemmas, we make no use of the results of [4]. • That is—except the use of relaxed controls—precisely the stochastic Bellman equation. • The cohomology groups $H^q(E)$ all vanish except possibly in one single dimension. • Then $F$ is invertible except possibly on an at most countable set. • Thus, $F$ is invertible except where ⟨at⟩ $x = 0$. • Hence $F$ is invertible except at countably many points. • The desingularization of $f$ is $X$ except when $Q$ and $Q'$ have a common factor, in which case..... • We have not required $f$ to be....., and we shall not do so except when explicitly stated. • The assumptions of Section 3 are still in force except that for greater generality we do not assume that $f$ is continuous. • This is essentially the same type of isogeny as in (2.2), except that composed with the isomorphism $\psi$.
**2** The trivial cases when the family consists of only one set are excepted.

**exception** Besides their possible role in physics, the octonions are important because they tie together some algebraic structures that otherwise appear as isolated and inexplicable exceptions. • There are few exceptions to this rule. • As the proof will show, these properties, with the exception of (c), also hold for complex measures. • With the exception noted below, we follow Stanley's presentation [3, Sec. 2].

**exceptional** Only in exceptional circumstances is it true that $f(x+y) = f(x) + f(y)$. [Note the inversion.]

**exchange** **1** Anderson's theorem replaces the restriction that $f$ is concave with a much weaker condition, but requires in exchange the symmetry of $K$.
**2** [*see also*: interchange, swap] The notion of backward complete is defined analogously by exchanging the roles of $f$ and $f^{-1}$. • It is highly likely that if one of the $X$'s is exchanged for another, the inequality fails.

**exclude** [*see also*: preclude, prevent, rule out] The condition $A < B$ excludes quite a few of the standard Young functions. • It remains to exclude the case where..... • Note that we explicitly exclude $\infty$ from the values of a simple function. • The possibility $A = \emptyset$ is not excluded.

**exclusive** The two cases are not mutually exclusive.

**exclusively** We will work exclusively in the category of standard Borel probability spaces, and so will often suppress mention of their sigma-algebras.

**exemplify** [*see also*: example, witness] The elasticity of $M$ is clearly at least equal to $n$ (as exemplified by the element $x$). • This exemplifies a well-used philosophy in Ramsey theory that underlying every partition result there is some notion of largeness.

**exercise** It is an elementary exercise in algebra to show that..... • It is a trivial exercise to extend our results to the setting where.....

**exhibit** [*see also*: demonstrate, reveal, show, display, indicate] Formula (7) exhibits the same phenomenon. • The resulting formula exhibits $u$ as the Laplace transform of $x$. • This rather counterintuitive phenomenon is exhibited by the following example. • A function exhibiting this type of behaviour has been constructed by Cox [7].

**exist** Note that $\dim E$, if it exists, is..... • There exists a function $f$ and a constant $c$ such that..... [OR There exist a function $f$ and a constant $c$] • The limit $\lim_{x\to 0} f(x)$ exists. [NOT "There exists a limit $\lim_{x\to 0} f(x)$."] • We take $a$ to be a finite substructure of $k$ that contains $a_0$ and is closed under $\Lambda_0$. Such exists by the compactness of $\Lambda_0$. • What relations exist between $A$ and $B$?

**existence** [*see also*: presence] We first show that existence of a solution of..... provides a sufficient condition for optimality. • Given $f$ and $w$, we shall prove the existence of a solution to (Q). • This result shows that the mere existence of a nontrivial automorphism $j$ of $M$ produces the cut $I(j)$ of $M$ that satisfies (2).

**expand** [*see also*: develop, work out, detail, length] Theorem 3 below expands on this idea. • Expand $f$ in powers of $x$. • The purpose of this paper is to expand substantially the class of maps for which the index can be computed.

**expansion** The Laurent expansion of $f$ around ⟨about⟩ zero is..... • expansion in powers of $x$ • the base $p$ expansion ⟨representation⟩ of $x$

**expect** [*see also*: hope] Hence we would expect the functions..... to behave similarly. • We need to check that $F$-derivatives behave in the way we expect with regard to sums, scalar multiples and products. • Compact multipliers, as one would expect, are those elements of $A$ which..... • It seems reasonable to expect that....., but we have no proof of this. • We expect that this is likely to hold for all outers, but cannot prove this as yet. • That is the least one can expect. • There is no reason to expect this to be an inverse map on $K$, but we do have the following. • However, $F$ is only nonnegative rather than strictly positive, as one may have expected. • It will eventually appear that the results are much more satisfactory than one might expect. • Some such difficulty is to be expected. • Along the way, we come across some perhaps unexpected rigidity properties of familiar spaces.

**expectation** [*see also*: hope] Kearnes developed a commutator theory for relative congruences, with the expectation that it can be used to prove Pigozzi's conjecture.

**expense** [*see also*: cost, price, sacrifice] At the expense of replacing $b$ by $b^2$ we may remove the condition..... • The contemporary usage avoids passing to a Lévy collapse extension at the expense of stronger large cardinal hypotheses.

**explain** [*see also*: describe, account, reason, justify] This explains why we chose 9 rather than, say, 1 for the second coordinate. • In Chapter 5, we shall explain what it means for a subset $V$ of $A$ to be determining for the centre of $X$. • This first construction explains how weak $H$-homomorphisms enter the picture. • To obtain the required map one must modify the method as explained in [9]. • For reasons to be explained later, this space is known as the space of spinors. • Any other unexplained notation is as found in Fox (1995).

**explanation** [*see also*: answer, solution, explication] The explanation for this definition is that..... • This corollary calls for some explanation and comment. • A formula like (3) surely deserves some explanation. • a lucid ⟨clear/plausible/likely/straightforward⟩ explanation

**explication** A complete explication of the Fox spaces is warranted, as it will likely reveal further clues to the differences between the parabolic and hyperbolic theories.

**explicit** We write $K(Q)$ for $K$ to make the dependence on $Q$ explicit. • This module is denoted by $H(X)$, or $H(X, R)$ if we want to make explicit the coefficient ring. • For simplicity, we suppress the explicit dependence on $x$ in the notation. • We shall proceed without making explicit distinctions between the two types of convergence. • Throughout what follows, we shall freely use without explicit mention the elementary fact that..... • An explicit example is two planes through the origin. • Here is a more explicit statement of what the theorem asserts. • However, we will be less explicit this time and we will have no need for the ergodicity arguments.

**explicitly** [*not*: "explicitely"] Explicitly, we have the formula..... • We have not required $f$ to be....., and we shall not do so except when explicitly stated. • The semigroup $F$ can be explicitly determined. • Note that we explicitly exclude $\infty$ from the values of a simple function.

**exploit** [= make full use of] We now exploit the relation (15) to see what else we can say about $G$. • Our first result generalizes (8) by exploiting some general facts seemingly overlooked by the aforementioned authors. • This connection has been exploited on occasion [= sometimes] to construct various infinite families of regular maps.

**exploration** [*see also*: analysis, investigation] As Corollary 2 shows, it is certainly a question deserving further exploration.

**explore** [*see also*: examine, investigate, study] The question of..... has been explored under a variety of conditions on $A$. • There has since been a considerable amount of work exploring the extent to which $G_1$ can differ from $G_2$.

**expose** [$\neq$ present] [Do not write "We expose examples of maps" if you mean *We present examples of maps*; "to expose" something means to uncover it (if it has been hidden) or make it known (if it has been secret).]

**exposition** [*see also*: presentation] The proof is mainly included to keep the exposition as self-contained as possible. • A detailed exposition, more suited to the purposes of the present article, is given in [9]. • For convenience of exposition, we work with an error term of the form..... • For completeness of exposition, we now recall the definition of the ordering on $R$. • The exposition owes much to the work of Dold described in [3]. • The author thanks the referee for recommending various improvements in exposition. • I thank the anonymous referees for their careful reading and thoughtful suggestions which have led to improvements to the exposition.

**express** [*see also*: show, demonstrate, indicate, convey] We can express $f$ in terms of..... • Each $f$ can be expressed in either of the forms (1) and (2). • The chart shows government spending expressed as a proportion of national income. • This is sometimes expressed by saying that..... • We would like to express our thanks to all of these institutions for their hospitality and support.

**expression** We shall abbreviate the expression (3) to $F(k)$. • For this choice of $\alpha, \beta$ and with $u = z = s$, the expression (5.3) simplifies greatly. • The eventual aim is to obtain a closed form expression for $F$. • How many such expressions are there? • the expression in brackets ⟨in braces, in parentheses⟩ • the rightmost expression [= the last one on the right] • the right-hand side expression

**extend** [*see also*: continue, generalize] We can extend $f$ by zero to the whole $\Omega$. • Now $A$, $B$ and $C$ all extend to a small neighbourhood of $x$. • However, $f$ does not extend over any homology ball. • We extend $f$ to be homogeneous of degree 1. • We make $D$ a Poisson algebra by extending the Poisson bracket on $A$ by linearity. • We begin by extending Construction 2.1 to encompass $B$-algebras. • This procedure can be extended to take care of any number of terms. • This conclusion extends to the general diffraction problem. • Much of the foregoing can be extended to the noncompact case. • The method of proof of Theorem B can be adapted to extend the right-to-left direction of Mostowski's result by showing that.....

**extension** [*see also*: generalization] Then $F$ has no holomorphic extension to any larger region. • [BS] contains an extension of Proposition 2 to the setting of finitely additive set functions. • an extension of $f$ off $U$

**extensive** [*see also*: thorough, large, wide, substantial, detail] There is now an extensive literature dealing with..... • For a comprehensive treatment and for references to the extensive literature on the subject one may refer to the book [M] by Markov. • An extensive treatment of the $h$-principle can be found in [6].

**extensively** [*see also*: fully, detail, expand, length] This subject has recently been extensively studied.

**extent** [*see also*: scope, range, degree, far] It is not clear to what extent this can be generalized to other varieties of loops. • The aim of this article is to study the relationship between the size of $A$, as measured by its diameter, and the extent to which $A$ fails to be convex. • In this section we ask about the extent to which $F$ is invertible.

**extra** [*see also*: additional, further, more] There is an extra statement that causes a new character to be read. • We find ourselves forced to introduce an extra assumption. • These extra stipulations are unimportant, but are given for definiteness. • The method sketched in Section 3 of [Con] carries through with our choice of $\psi = \psi_1 + \psi_2$, but there is one extra ingredient worthy of mention. • The first of these was suggested by J. Serrin, who showed how to modify my earlier treatment of $J(X)$ so as to obtain stronger results with no extra effort. • For general $\mu$, we need to do some extra work. • They defined the concept solely in terms of the norm of the Banach space, deliberately avoiding any extra structure.

**extract** We extract the following from the proof of Lemma 5 of [KL].

**extreme** **1** Two natural extremes arise that one has to consider: the case when..... and the case when..... • In this paper, we develop a new approach that is intermediate between these two extremes. • At the other extreme, $L$ could be empty. • At the other extreme is the set of tent maps with a dense orbit.
**2** An extreme example is when $F$ is a singleton.

## F

**face** The sort of problem which we are attacking has, on the face of it, nothing to do with differential algebra. [When first considered, it seems to be unrelated to differential algebra.]

**fact** [*see also*: information, detail, evidence, proof, actually] A stronger result is in fact true. • We note that $H$ is in fact not Lipschitz continuous if this condition is violated. • In fact, we can do even better, and prescribe finitely many derivatives at each point of $A$. • Now, just the fact that $F$ is a homeomorphism lets us prove that..... • The advantage of applying..... lies in the fact that..... • Observe that (1) just uses the fact that $m$ is unary.

**factor** **1** $E$ is similar to $F$ but scaled by a factor 1/3. • Thus $E$ is similar to $F$ with a scale factor 1/3. • The only additional feature is the appearance of a factor of 2. • Thus we need only alter our constants by a factor of 2 to deal with this case. • It can be shown that the nearest point projection $p$ reduces length by a factor of $\cos\alpha$. • This accounts for the factor 1/2 in (4).
**2** The map $f$ factors through the space $X$. • We can factor $g$ into a product of irreducible elements.

**fail** [*see also*: hold, invalid, short, lack] The space $X$ fails to have the Radon-Nikodym property. • For $j = 1$ the operator is bounded, yet the integral (8) fails to be finite. • However, this metric does not define a group topology, because group multiplication fails badly to be continuous. • It is highly likely that if one of the $X$'s is exchanged for another, the inequality fails. • If either of these conditions fails, the procedure will not halt.

**failure** Several examples of the failure of the Banach theorem in this situation were given in [2]. • The associator measures the failure of associativity, just as the commutator measures the failure of commutativity.

**fairly** [used with "positive" properties; *see also*: rather, reasonably] Tietze's theorem is a fairly direct consequence of Urysohn's lemma. • To see that $f = g$ is fairly easy. • In the next theorem, we give fairly minimal conditions that imply..... • There are, however, a few important papers of which we were unaware until fairly recently.

**fall** In 2007 profit fell by 37%. • The most frequently used models fall into one of the following two categories. • This example falls within the scope of Cox's theorem. • The method falls short of providing an explicit formula for the index. [= fails to provide] • In the latter case we may simply adjust $F$ to equal 1 on the Borel set where it falls outside the specified interval.

**fallacious** [*see also*: invalid, erroneous] However, this argument is fallacious, because as remarked after Lemma 3,.....

**false** The theorem is definitely false without the assumption that....., as an inspection of Example 3 shows. • It is this proposition that we believe to be false in Morava E-theory. • Suppose, towards a contradiction, that this is false. • This works regardless of whether $B$ is true or false. • There are finite measures for which the omission of (iv) would make (b) false.

**familiar** [*see also*: common, customary, usual, standard] The reader is assumed to be familiar with elementary $K$-theory. • Let $E$ be Cantor's familiar middle thirds set. • We encourage the reader unfamiliar with techniques from the theory of..... to consult [BS].

**familiarity** We assume familiarity with basic ideas of nonstandard analysis.

**family** [*see also*: collection, set] Let $I$ be the family of all subalgebras which contain $F$. [OR that contain $F$; you can use either *that* or *which* in defining clauses.] • The difficulty is that it is by no means clear what one should mean by a normal family. • The words *collection, family* and *class* will be used synonymously with *set.*

**famous** [*see also*: celebrated] To recover Wiener's famous result that Brownian paths are continuous, one needs to use more sophisticated reasoning.

**famously** Famously, Brown and Fox [4] recognized that this group is non-Hopfian.

**far** [*see also*: extent, much, nowhere] This problem is still far from being solved. • Its description is far from complete. • To go into this in detail would take us too far afield. • However, (1) has been proved so far only in the case where..... • So far we have not topologized $M(R)$. • So far it seems not to be known whether the geometric condition on $X$ can be omitted. • However, we have thus far been unable to find any magic squares with seven square entries. • The simplest and by far the most useful approach is obtained by..... • As far as we are aware, there is no proof in print. • Functions which are equal almost everywhere are indistinguishable as far as integration is concerned.

**fashion** [*see also*: manner, way, method] This was proved in elementary fashion by P. J. Cohen. • We shall need ways of constructing new triangulations from old ones which alter the $f$-vector in a predictable fashion. • Continuing in this fashion, we get a collection $\{V_r\}$ of open sets, one for every rational $r$, with..... • in a similar fashion

**fast** [*see also*: quickly, rapidly] a fast decreasing function [NOT "a fastly decreasing function"] • The other player is one-third as fast.

**favorable** In (3.6), the most favorable case is when $t$ is in the centre of the interval.

**feasible** [*see also*: possible] It does not appear feasible to adapt the methods of this paper to.....

**feature** [*see also*: characteristic, detail, element, ingredient] **1** One unusual feature of the solution should be pointed out. • The remarkable feature of this theorem is that..... • The only additional feature is the appearance of a factor of 2. • The main new feature is the use of the face ring to produce lower bounds for the number of vertices. • This $t$ has the feature we want. • Iterated correspondences display many of the features of..... • a basic ⟨distinctive/essential/key/main/major/significant/dominant/special⟩ feature

**2** We now describe a more interesting example featuring an operator that is non-trivially supercyclic. • This article features results in both spectral theory and operator ergodic theory made possible by a recent renewal of interest in the consequences of James's inequalities.

**fellowship** The paper was commenced whilst the second author held a Fullbright Fellowship.

**few** [*see also*: some, several, less] There are few exceptions to this rule. [= not many] • There are few, if any, other significant classes of processes for which such precise information is available. • Few of various existing proofs are constructive. • He accounts for all the major achievements in topology over the last few years. • The generally accepted point of view in this domain of science seems to be changing every few years. • This set has no fewer elements than $K$ has. [NOT "no less elements"; *less* should not be followed by a plural countable noun. However, use *less* when it is followed by *than* or when it appears after a noun: $X$ has no less than twenty elements; $Y$ has ten elements or less.] • Any vector with three or fewer 1s in the last twelve places has at least eight 1s in all. • Theorem 3 is remarkable in that considerably fewer conditions than in the previous theorems ensure universality. • Therefore, $F$ has the fewest points when the index vanishes. • There are a few exceptions to this rule. [= some] • Apart from a few embellishments necessitated by some technical difficulties, the ideas differ very little from those used to prove Lemma 4. • Many interesting examples are known. We now describe a few of these. • Only a few of those results have been published before. • Quite a few of them are now widely used. [= A considerable number] • The condition $A < B$ excludes quite a few of the standard Young functions.

**field** [*see also*: area] Further motivation for looking at ideal class groups comes from the field of cryptography. • his field of scientific interest

**figure** As shown in Figure 3, neither curve intersects $X$. • These patterns are illustrated in Fig. 4. • An example is plotted in Figure 1. • These are displayed on the left in Figure 3. • The graph of Fig. 5 shows that..... • This figure is drawn to a scale of one to ten.

**fill** The reader is encouraged to fill in the missing details. • Sets of the form (6) are disjoint and fill out any such orbit.

**final** [*see also*: eventual, ultimate] This paper is in final form. • In the final section of the paper, we list some open problems.

**finally** [*see also*: last, lastly] Finally, multiplication by a permutation matrix will get the exponents in descending order. • With Lemma 4 in ⟨at⟩ hand, we can finally define $E$ to be equal to $P(m)/H$. • This finally yields $f = g$. [NOT "yields that $f = g$"]

**find** [*see also*: come across, discover, see, obtain] Continuing in this manner, we see that for $\sigma \geq 4$, the curve $C_{4k+3}$ is found in the half-strip $B$. • The main results of the paper are found in Section 2. • Our proof of Theorem 2 is based upon ideas found in [BN]. • Any other unexplained notation is as found in Fox (1995). • Following the same lines we find that it takes $k$ prolongations to get an immersed curve. • This will help us find what conditions on $A$ are needed for $T(A)$ to be analytic. • Then, for any two fixed points that Wagner's method does not find to be equivalent, he considers the possible lengths of potential solutions to (1). • We find ourselves forced to introduce an extra assumption. • This accords with the intuition that as we pass down the coding tree, we find out more and more detailed information about the ordering actually represented. • Our main finding in this paper is that this intuition turns out to be erroneous.

**fine** [*see also*: delicate, subtle, minor] There is only a fine distinction between the two schemes. • A change in perspective allows us to gain not only more general, but also finer results than in [ST].

**finish** [sth; doing sth; *see also*: close, complete, conclude, end, terminate] This finishes the proof. • Two more triangulations will finish the job. • After having finished proving (2), we shall return to..... [NOT "finished to prove (2)"] • We finish by mentioning that, suitably modified, the results of Section 2 apply to the $AP$ case. • Continuity then finishes off the argument.

**first** **1** [*see also*: original] He was the first to propose a complete theory of triple intersections. • Because N. Wiener is recognized as the first to have constructed such a measure, the measure is often called the Wiener measure. • It is worth noting that this is the first paper to systematically study the base size of classical groups. • Let $S_i$ be the first of the remaining $S_j$. • The first two are simpler than the third. [OR the third one; *not*: "The first two ones"] • As a first step we shall bound $A$ below. • Here is a first relation between $L(G)$ and endotrivial $kG$-modules. • We do this in the first section, which the reader may skip on a first reading. • At first glance, this appears to be a strange definition. • The first and third terms in (5) combine to give..... • the first author = the first-named author

**2** [*see also*: initially, originally, beginning, firstly] First, we prove (2). [NOT "At first"] • We first prove a reduced form of the theorem. • Suppose first that..... • His method of proof was to first exhibit a map..... • In Lemma 6.1, the independence of $F$ from $V$ is surprising at first. • It might seem at first that the only obstacle is the fact that the group is not compact. • [Note the difference between *first* and *at first*: *first* refers to something that precedes everything else in a series, while *at first* [= initially] implies a contrast with what happens later.]

**firstly** [*see also*: first] Firstly, if $G$ is abelian, does it follow that $S(G) = K$, or equivalently, that $X_G = p(M(G))$?

**fit** [*see also*: suit, suitable, satisfactory, appropriate] In addition, some other systems that do not fit this framework are shown to satisfy the conjecture. • This cell decomposition of Morse theory fits in with the more group-theoretic Bruhat decomposition. • Other types fit into this pattern as well. • Thus we obtain a map $f : X \to Y$ which fits into the following commutative diagram:..... • We aim at fitting this result into the general scheme of..... • Although these proofs run along similar lines, there are subtle adjustments necessary to fit the argument to each new situation. • The key part is to show that the submanifolds $U_k$ fit together to form a complex submanifold. • These maps fit together into a commutative diagram.....

**fix** For fixed $k$,..... • We temporarily fix $n$ in $N$. • Fix $n$ for the moment. • Fix $n$ and let $c$ vary. • Similarly, $j$ is the smallest power of $h$ that fixes any point of $A$. • The mapping $f$ leaves ⟨keeps⟩ the origin fixed. • Thus $F$ has $x$ as its unique fixed point.

**flavour** The case of binary forms has a different flavour.

**focus** **1** In this paper, the main focus is on the Riemann moduli space. • Our focus now will be on one-sided averages.

**2** In this section we shall focus attention on..... • Even though more general probabilistic constructions could be envisaged [= contemplated], we focus on those schemes where.....

**-fold** Then $P$ covers $M$ twofold. • Sales increased almost fourfold in this period. • The motivation for writing this paper was twofold. • By $k$-fold integration by parts,.....

**folklore** The following easy lemma is surely folklore. • Both theorems appear to be folklore—see Cowling [11]—but we have been unable to track down complete proofs. • We now prove a simple fact about semigroups; it is surely a folklore result. • The following simple example has long been a part of ergodic-theoretic folklore.

**follow** [*see also*: imply] The remarks following Theorem 2 show that $a = 0$. • The analysis to follow only covers the case $d = 1$. • His argument is as follows. • The fact that the number $T(p)$ is uniquely defined, even though $p$ is not, enables us to define the nullity of $A$ as follows. • In what follows ⟨In all that follows⟩, $L$ stands for..... • Throughout what follows, we shall freely use without explicit mention the elementary fact that..... • It follows that $a$ is positive. [= Hence ⟨Consequently,/Therefore,⟩ $a$ is positive.] • Firstly, if $G$ is abelian, does it follow that $S(G) = K$, or equivalently, that $X_G = p(M(G))$? • If we prove that $G > 0$, the assertion follows. • The general case follows by changing $x$ to $x - a$. • We follow Kato [3] in assuming that $f$ is upper semicontinuous. • Following the same lines we find that it takes $k$ prolongations to get an immersed curve. • The proof follows very closely the proof of (2), except for the appearance of the factor $x^2$. • It is intuitively clear that the amount by which $S_n$ exceeds zero should follow the exponential distribution.

**following** [*see also*: ensuing, subsequent, succeeding] We make the following provisional definition, which is neither general nor particularly elegant, but is convenient for the induction which is to follow. • The following three statements are equivalent:..... • For $D$ a smooth domain, the following are equivalent:..... • The following has an almost identical proof to that of Lemma 2. • The idea of the ensuing computations is the following:.....

**for** **1** We write $z = (x, y)$ for the common point of $A$ and $B$. • We first consider the M/G/1 queue, where M (for "Markov") means that..... • For $D$ a smooth domain, the following are equivalent. • For $m$ not an integer, the norm can be defined by interpolation. • For (ii), consider..... [= To prove (ii), consider] • Now (3) is clear. As for (4), it is an immediate consequence of Lemma 6. [= Concerning (4)] • Thus $F$ is integrable for the product measure. • Then for such a map to exist, we must have $H(M) = 0$. • For a vector $v$ to be in $A$, its contraction with $w$ should vanish. • The problem with this approach is that $V$ has to be $C^1$ for (3) to be well defined. • Computing $f(y)$ can be done by enumerating $A(y)$ and testing each element for membership in $C$. • Therefore, the system (5) has a solution of the sought-for type.

**2** [*see also*: because] We must have $Lf = 0$, for otherwise we can replace $f$ by $f - Lf$. [= because otherwise] • It turns out that it suffices to show that $A = 1$, for if this is proved, the preceding remark shows that..... • [This use of *for* sometimes leads to confusion; e.g., never write "for $x \in X$" if you mean *since* $x \in X$. Also, avoid starting a sentence with a *For* in this sense.] • [Do not use *for* followed by an *ing*-form to indicate the purpose of one's actions: instead of "For showing that $f$ is bounded, we observe", write *To show that $f$ is bounded, we observe.* However, you can use *for* to indicate the 'purpose' of a thing: *This provides a method for recognizing pure injective modules.*]

**force** [*see also*: strength] **1** The next lemma is the first in this section that seems to require the full force of the normality of $X$. • The assumptions of Section 3 are still in force except that for greater generality we do not assume that $f$ is continuous.

**2** [*see also*: make, necessitate, impose, require] If we choose $\mu$ close to 1, we can force $r < 0$. • This forces $f$ to satisfy (6). • We find ourselves forced to introduce an extra assumption.

**foregoing** [*see also*: above, precede] How much of the foregoing can be extended to the non-compact case?

**form** **1** [*see also*: shape, structure, type, kind] The map $F$ can be put ⟨brought⟩ into this form by setting..... • Let $S$ be the set of all solutions of (8) of the form (3). • We shall then show that this $f$ can be represented in the form $f =$..... • This implies that the local martingale must take a very specific form. • in diagonal form

**2** [*see also*: constitute, make up, account for, represent] Consider the Blaschke product formed with the zeros of $f$. • They form a base of the topology of $X$. • Theorem 2 will form the basis for our subsequent results. • The key part is to show that the submanifolds $U_k$ fit together to form a complex submanifold.

**formalism** In this subsection, we develop a formalism that will be used in the proofs of our main results.

**formally** The sum in (2), though formally infinite, is therefore actually finite.

**former** [*see also*: latter] Then either....., or..... In the former case,..... • Examples 1 and 2 give two operators, the former bounded and the latter not, with..... • The definition is stated in terms of local martingales, rather than martingales, for the technical reason that the former are easier to characterize in applications.

**formula** [*pl.* formulas or formulae] The main information conveyed by this formula is that..... • These models furnish integral formulas for the matrix entries of $F$. • It seems appropriate to mention in passing the corresponding formula for the cohomology of $B_n$. • In addition to illustrating how our formulas work in practice, it provides a counterexample to Brown's conjecture. • Find integral formulas by means of which the coefficients $c_n$ can be computed from $f$. • For later use, we record the following formulas:.....

**formulate** [*see also*: state] We can now formulate the problem to which the rest of this article is dedicated. • It is also clear that there are extensions to....., but they do not seem to be worth the effort of formulating them separately. • The benefit of formulating our notion of 'isomorphism section' as above will become clear shortly.

**formulation** [*see also*: statement] In the next section we introduce yet another formulation of the problem. • Here we consider a dual variational formulation which can be derived similarly to that for the sandpile model. • It is proved in [1] (albeit with a slightly different formulation) that.....

**forthcoming** In this section we gather some miscellaneous results that are more or less standard. These will be used to calculate the constants $c_\alpha$, and we place them here to avoid interrupting the forthcoming arguments.

**fortunately** Fortunately, there is a very satisfactory solution to this problem, due to Vermes.

**forward** If $t$ does not appear in $P$ at all, we can jump forward $n$ places.

**foundation** [*see also*: basis, underlie] In Section 2, we lay the foundations for a systematic study of..... • Leray and Schauder laid the foundations for the generalization of the Lefschetz index to infinite dimensions.

**fraction** [*see also*: proportion, ratio] A mere fraction of this energy is currently utilized.

**framework** [*see also*: context, setting, set-up] This is actually a special case of the preceding framework. [NOT "preceeding"]

**fraught** [with sth = full of sth] The most direct way is to take the $\pi_n$ to be Nielsen-inequivalent choices of generating sets, but this approach is fraught with technical difficulties.

**free** Then $H$ is a free $R$-module on as many generators as there are path components of $X$. • As we are only interested in the modulus of the extension operator, we are free to add constants to the phase, and so we work instead with.....

**freedom** It is the freedom of choice of $D$ in this construction that enables us to.....

**freely** Throughout what follows, we shall freely use without explicit mention the elementary fact that.....

**frequently** [*see also*: often, repeatedly] Part (c) is a frequently used criterion for the measurability of a real-valued function. • We shall frequently write w.w. for 'weakly wandering'. • This sort of proof will recur frequently in what follows.

**from** This is immediate from 3.2. • We see from (2.3) that..... • From (2.3) we have..... • In Section 2, we review the relevant algebraic background from bordered Floer homology. • Then $X$ is the Swiss cheese obtained from the family $D$. • Thus $A$ can be written as a sum of functions built up from $B$, $C$, and $D$. • From now on, $F$ will be fixed. • Consider the family of ordered triples of elements from $F$. • The main difference from the case of finite coding trees is the presence of limits. • Clearly, the contribution from those $r$ with $A(r) > 0$ can be neglected. • In Lemma 6.1, the independence of $F$ from $V$ is surprising at first. • The presence here of the direct summand $H$ is simply to prevent $A$ from having disconnected spectrum.

**fulfil** [*or*: fulfill] We now fulfil the promise made at the start of the proof by handling the case of $G = S_n$.

**full** [*see also*: complete, entire, whole, total] For a fuller discussion of this topic, see [6].

**fully** [*see also*: completely, entirely, detail, expand, extensively] However, to our knowledge this is not fully resolved. • This is discussed more fully in [5].

**function** [*see also*: map, mapping, transformation] The function $F$ is bounded above ⟨below⟩ by 1. • The function $g$ achieves ⟨attains/takes⟩ its maximum at $x = 5$. • Now choose $t$ appropriately as a function of $\varepsilon$. • Then $F$ is a function of $x$ alone. • the space of all continuous functions on $X$ • It has some basic properties in common with another most important class of functions, namely, the continuous ones. • We begin by describing the class of functions $f$ considered, which includes the special cases quoted above. • The resulting metric space consists precisely of the Lebesgue integrable functions, provided we identify any two that are equal almost everywhere. • The present proof is so arranged that it applies without change to holomorphic functions of several variables. • In [3] we only allowed weight functions that were $C^1$. • It may help to think of $F$ as being a smooth approximation to the Heaviside function. • a function continuous at zero [NOT "a continuous at zero function"] • a function bounded below = a lower bounded function • a function of moderate growth • an upper semicontinuous function • an infinitely differentiable function • a $C^1$ function • a $p$-integrable function

**functor** The assignment of $K_1$ to $K$, and of $T_1$ to $T$, defines a functor between the category of commutative algebras and the category of compact semigroups with continuous homomorphisms.

**furnish** [*see also*: give, offer, provide, supply, afford] These models furnish integral formulas for the matrix entries of $F$. • Then Lemma 2 furnishes the bound $f \leq$..... • The simplest example of this is furnished by.....

**further** [*see also*: additional, extra, more] Thus every subsequence contains a further subsequence converging weakly to some limit. • The only case requiring further analysis occurs when $f = 0$. • The results have been encouraging enough to merit further investigation. • As Corollary 2 shows, it is certainly a question deserving further exploration. • We omit further details. • A further complication arises from 'BP', which works rather differently from the other labels. • We shall encounter similar situations again, and shall apply convergence theorems to them without further comment. • Proceeding further in this direction, we obtain the following corollary. • It should be possible to enhance the above theorem further by allowing an arbitrary locally compact group $L$.

**furthermore** [*see also*: also, moreover, likewise] Furthermore, adopting this strategy considerably eases constructing a coding tree from a linear order.

**futile** [*see also*: doomed] Having established (1), one might be tempted to try to extend this result to general $p$ through the choice of a suitable ideal $B$. Alas, as we shall see now, this attempt is futile.

**future** For future reference, we record this in the following corollary. • We quote for future reference another result of Fox: there exists..... • This is an interesting area for future research. • For future use, choose any monotone $h(m)$ tending to infinity such that..... • Bases for finite exceptional groups will also be the subject of a future paper. • These upper bounds are too large to be useful in computer calculations in general, but the ideas in the proofs will surely contribute to better bounds in the future.

## G

**gain** [*see also*: get, obtain, achieve] The theorem gains in interest if we realize that..... • Thus it is reasonable to attempt, using this homeomorphism, to gain an understanding of the structure of $M$. • It is useful to consider some rather simple examples to gain some intuition. • A change in perspective allows us to gain not only more general, but also finer results than in [ST].

**gap** The statement does appear in [3] but there is a simple gap in the sketch of proof supplied. • The theory of correspondences may be viewed as bridging the gap between.....

**gather** [*see also*: collect, combine, piece together] We gather here various notation for future reference. • In this section we gather some miscellaneous results that are more or less standard. • The data were gathered for about a year.

**general** His techniques work just as well for general $v$. • How are these two optimality notions related? In general, they are not. • While topological measures resemble Borel measures, they in general need not be subadditive. • We suspect that more can be said in general about which subextensions can be obtained from finite-rank modules, but we will not explore this matter further here.

**generality** There is no loss of generality in assuming that..... • This involves no loss of generality. • Without loss of generality we can assume that..... • [In many cases, the phrase "without loss of generality" can be omitted: write simply: *We can clearly assume that.....* Avoid using the abbreviation "w.l.o.g."] • Without losing any generality, we could have restricted our definition of integration to integrals over all of $X$. [NOT "Without loosing"] • It simplifies the argument, and causes no loss of generality, to assume..... • A completely different method was used to establish Theorem 2 in full generality. • Rather than discuss this in full generality, let us look at a particular situation of this kind. • A number of authors have considered, in varying degrees of generality, the problem of determining..... • It seems preferable, for clarity's sake, not to present the construction at the outset in the greatest generality possible. • It seems that the relations between these concepts emerge most clearly when the setting is quite abstract, and this (rather than a desire for mere generality) motivates our approach to the subject.

**generalization** [*see also*: extension] Leray and Schauder laid the foundations for the generalization of the Lefschetz index to infinite dimensions. • We pause to record a generalization of Theorem 2 in a different direction. • It is not immediately obvious what this generalization has to be.

**generalize** [*see also*: extend] Corollary 2 generalizes and strengthens Theorem 3 of [9]. • This approach does not seem to generalize to arbitrary substructures. • It is not clear to what extent this can be generalized to other varieties of loops.

**generally** However, $M$ is generally not a manifold. • It is not generally possible to restrict $f$ to the class $D$. • More generally this argument also applies to characterizing Hurewicz subsets of $I$.

**generate** This is slightly at odds [= inconsistent] with the terminology of [4], as Fox defines the trace filter to be the normal filter generated by $A$. • The family of 4-sets will be used to generate a symmetry outside $N$ but in $M$.

**get** [*see also*: obtain, acquire, make, arrange, overcome] Apply Theorem 3 to get a function..... • We thus get $f = g$. [NOT "We thus get that $f = g$."] • We do not expect to get $F$ closed. • The induced topology is not compact, but we can always get it to be contained in a Bohr topology. • Finally, multiplication by a permutation matrix will get the exponents in descending order. • Fortunately, $F$ does not get too close to $p$. • To get around this difficulty, assume that..... • It is also tempting to get round this problem by working with.....

**give** [*see also*: provide, offer, supply, furnish, afford] This gives (1) and shows that..... • However, a slight strengthening of the hypotheses does give us a regular measure. • To give the map $s$, we just have to specify where to map generators of the homology of $M$. • We now give some applications of Theorem 3. • We give $X$ the topology of uniform convergence on compact subsets of $I$. • The action of $G$ is given by $gf =$..... • The argument just given shows that..... • We first show that $f$ satisfies the characterization given. • Note that $E$ can be given a complex structure by setting..... • Suppose we are given an $f$ of the form $f =$..... • Given $\delta > 0$, we can find $\varepsilon$ such that..... • This is certainly reasonable for Algorithm 3, given its simple loop structure. • He used a new version of an algorithm for finding all normal subgroups of up to a given index in a finitely presented group. • A function given on $G$ gives rise to an invariant function on $G'$.

**glance** [*see also*: look, sight] At first glance Lemma 2 seems to yield four possible outcomes. • Neighbourhoods of points in these spaces appear at first glance to have a nice regular structure, but upon closer scrutiny, one sees that many neighbourhoods contain collections of arcs hopelessly folded up. • Now, for arbitrary $n$, a glance at the derivative shows that.....

**glue** Then $M$ is obtained by glueing ⟨gluing⟩ $X$ to $Y$ along $Z$. • There is a natural way to glue the associated varieties together along their common boundary. • The set $A$ is obtained from $B$ by removing a neighbourhood of $C$ and gluing in a copy of $D$.

**go** **1** [*see also*: stroke] Its role is to rule out having two or more consecutive $P$-moves (on the grounds that they can be performed in one go).

**2** [*see also*: continue, proceed, pursue, turn] a path obtained by going from $A$ to $B$ along the lower half of the circle • Here the interesting questions are not about individual examples, but about the asymptotic behaviour of the set of examples as one or another of the invariants (such as the genus) goes to infinity. • This proves that the dimension of $S$ does not go below $q$. • We adopt the convention that the first coordinate $i$ increases as one goes downwards, and the second coordinate $j$ increases as one goes from left to right. • Some members go into more than one $V_k$. • To go into this in detail would take us too far afield. • We now go through the clauses of Definition 3. • Before going to the proof, it is worth noting that..... • This idea goes back at least as far as [3]. • This argument goes back to Banach. • Many of these results are known, and indeed they go back to the seminal paper of Dixmier [D] of 1951. • Going back to the existential step of the proof, suppose that..... • Before we go on, we need a few facts about the spaces $L_p$. • The equation $PK = 0$ then goes over to $QK = 0$. • The rest of the proof goes through as for Corollary 2, with hardly any changes. • There are kneading sequences for which the arguments of Section 4 go through routinely. • This allows the proof of the continuity of $G$ to go through as before.

**goal** [*see also*: aim] Our ultimate goal is to determine these base-related measures for all simple algebraic groups. • Indeed, we essentially achieve this goal by computing these quantities in almost every case.

**good** [*see also*: satisfactory, appropriate, suitable] The kernel satisfies good large time bounds if.....

**grant** We claim that $F$ is the product of two disjoint cycles. Granting this, we reach a contradiction as follows.

**graphically** Graphically, a cancellable pair in $X$ corresponds to an edge labelled $I$ in the directed graph of $X$.

**grasp** [*see also*: understand, recognize, realize, see] To grasp the difference between the two notions, consider.....

**grateful** [*not*: "greatful"] The author is grateful to the referee for a number of helpful suggestions for improvement in the article. • We are grateful to Daniel Newman and Richard Bowen for their assistance. • We are also grateful to the anonymous referee for carefully reading the paper and making useful suggestions.

**gratefully** The author gratefully acknowledges the referee's helpful comments pertaining to the first draft of this paper.

**great** [*see also*: large, more, profound] Then $F$ is 3 greater than $G$. • Thus $F$ is not ⟨no⟩ greater than $G$. • Consequently, $F$ is greater by a half. • However, $F$ can be as great as 16. • One should take great care with..... • In his Stony Brook lectures, he laid great emphasis on the use of..... • Another topic of great interest is how much of adjunction theory holds for ample vector bundles. • We could have adopted an approach to proving Theorem 2 along a line of reasoning which bears greater resemblance to the treatment of the analogous result in Section 1. • To show the greater simplicity of our method over Brown's, let us..... • It seems preferable, for clarity's sake, not to present the construction at the outset in the greatest generality possible.

**greatly** [*see also*: considerably, significantly, substantially] For this choice of $\alpha, \beta$ and with $u = z = s$, the expression (5.3) simplifies greatly.

**ground** [*see also*: reason] To prepare the ground for this deduction, we first modify Theorem 3 to accommodate [= take into account] sets which are relatively dense in a suitably pseudorandom set. • Its role is to rule out having two or more consecutive $P$-moves (on the grounds that they can be performed in one go).

**group** Plugging these into (6) and grouping the elements of $S$ together by type, we can use (16) to deduce that.....

**grow** [*see also*: develop, increase] The product being considered grows like $n^3$. • Our study grew out of some valuable conversations with Kirk Douglas.

**growth** The structure of a Banach algebra is frequently reflected in the growth properties of its analytic semigroups. • We give a fairly simple description of a wide class of averaging operators for which this rate of growth can be seen to be necessary. • the growth rate of $V^n$ as $n \to \infty$ • a function of moderate growth

**guarantee** [*see also*: ensure] **1** Analyticity of the geodesic flow is no guarantee of..... Observe how the completeness of $L^2$ was used to guarantee the existence of $f$.

**2** However, (5) is sufficient to guarantee invertibility in $A$. • We are guaranteed only one dense product for each $k$. • This guarantees that $f$ satisfies all our requirements. • ....., which, by another theorem of Kimney's, is more than enough to guarantee that $P$ gives $A$ outer measure 1.

## H

**half** **1** We sketch the proof of the easy half of the theorem. • This proves one half of (2); the other half is a matter of direct computation. • the left half of the interval • the upper half of the unit disc • Thus $F$ is greater by a half. • one and a half hours [Note the plural.]

**2** $F$ is half the sum of the positive roots. [OR half of the sum] • Half of the sets of $R$ miss $i$ and half the remaining miss $j$. • Then $J$ contains an interval of half its length in which $f$ is positive. • Corollary 2 suggests that ranks of elliptic curves are 0 half the time and 1 half the time asymptotically. • On average, about half the list will be tested. • Now $F$ is half as long as $G$. [OR as $G$ is] • We divide $N$ in half. • The length of $F$ is thus reduced by half.

**hand** Our presentation is therefore organized in such a way that the analogies between the concepts of topological space and continuous function, on the one hand, and of measurable space and measurable function, on the other, are strongly emphasized. • On the other hand, $F$ fails to have property $P$. [NOT "On the other side"] • With Lemma 4 in ⟨at⟩ hand, we can finally define $E$ to be equal to $P(m)/H$. • Once the dissipation relation is in hand, no further work is required. • It can be easily calculated by hand that the nonzero solutions are.....

**handle** [*see also*: consider, deal, take up, treat, manipulate, control] The theorem indicates that arbitrary multipliers are much harder to handle than those in $M(A)$. • But (9) needs handling with greater care. • However, as we are about to see, this complication is easily handled. • The map $G$ can be handled in much the same way. • This is handled by a direct case-by-case argument.

**happen** [*see also*: occur] If this happens on a set of positive measure, then $f$ cannot be continuous. • It may happen that $B_1$ is the only compatible compactification. • What happens if the word "nonnegative" is omitted? • Under what conditions does it happen that $r < s$?

**hard** [*see also*: difficult, complex, complicated, involved, intricate] This is the hard part of Jones's theorem. • The theorem indicates that arbitrary multipliers are much harder to handle than those in $M(A)$. • The calculation of $M(f)$ is usually no harder than the calculation of $N(f)$. • The cases $p = 1$ and $p = 2$ will be the ones of interest to us, but the general case is no harder to prove. • This makes $G$ not hard to describe by generators and relations.

**hardly** [*see also*: little] The rest of the proof goes through as for Corollary 2, with hardly any changes. [= with almost no changes] • On the whole, the solution can hardly be considered satisfactory. [= is rather unsatisfactory]

**harm** [*see also*: loss] The hypothesis $f(0) \neq 0$ causes no harm in applications, for if.....

**have** [*see also*: possession] This square has a perimeter equal to the circumference of the circle. • Then $M$ is a Banach algebra having for its identity the unit point mass at 0. • Thus $R$ has rank 2 ⟨determinant zero/cardinality **c**⟩. • Therefore $F$ has a countable spectrum ⟨a finite norm/a compact support⟩. [OR $F$ has countable spectrum etc.] • Since....., we have $Tf$ equal to 0 or 2. • Then $L$ consists of those $g$ which have $Kg(n) = 0$ for all $n$. • Is it possible to have $m(E) < 1$ for such a set? • However, $X$ does have finite uniform dimension. • Then $B$ does not have the Radon-Nikodym property. • Let $f$ be a map with $f|M$ having the Mittag-Leffler property. • Suppose $A$ is maximal with respect to having connected preimage. • This allows proving the representation formula without having to integrate over $X$. • It has to be assumed that..... • The problem with this approach is that $V$ has to be $C^1$ for (3) to be well defined.

**heart** [*see also*: core, essence] This simple observation lies at the heart of the proof of our first theorem.

**heavily** [= a lot] Standard Banach space notation is used throughout. For clarity, however, we record the notation that is used most heavily. • We shall draw heavily on ideas from [3].

**heavy** [*see also*: cumbersome] This section makes heavy use of a theorem of Alsen and related results. • This depends on some heavy calculation with modular forms. • Only for very heavy-tailed data is this property violated. [Note the inversion.]

**help** [*see also*: aid] **1** However, this approach seems to be of little help in the mathematical theory of the problem. • [Note that you can do something with the help of a person, but *with the aid* or *with the use* of a method, a lemma etc.]

**2** This will help us find what conditions on $A$ are needed for $T(A)$ to be analytic. [OR help us to find] • The knowledge of the invariant subspaces of an operator helps us to visualize its action. • It is hoped that a deeper understanding of these residues will help establish new results about the distribution of modular symbols. • To calculate (2), it helps to visualize the $S_n$ as the successive positions in a random walk. • It may help to think of $F$ as being a smooth approximation to the Heaviside function. • For future reference, it may help to make this identification explicit:.....

**helpful** [*see also*: useful, advantageous, valuable] It is helpful to keep these similarities in mind.

**hence** [*see also*: consequently, so, thus, therefore, follow] Then $F$ is continuous, hence bounded on $D$. • We can suppose $R$ is semilocal (and hence a PID).

**henceforth** [= hereafter, from this time on] This theorem will henceforth be referred to as the minimum principle. [Note the double $r$ in *referred*.] • We henceforth identify $SC(K \times K)$ with a $*$-subalgebra of $L^\infty(X \times X)$. • Henceforth, therefore, we may assume that $f$ is irreducible.

**here** Here is a simple direct proof. • Here is a restatement:..... • Here are some elementary properties of these concepts. • Here are some other situations in which we can draw conclusions only almost everywhere. • It is here assumed that..... • Here and throughout, $P(E)$ denotes..... • The parameter interval was here taken to be $(0, 1)$.

**hereafter** [= henceforth, from now on] This theorem will hereafter be referred to as the minimum principle. [Note the double $r$ in *referred.*] • This property will be used repeatedly hereafter.

**heuristic** **1** Then $a \leq g^{3n}$, which is a refined version of what our heuristic predicts.
**2** We can do a heuristic calculation to see what the generator of $x_t$ must be.

**high** A similar result holds in higher space dimension. • The vector field $H$ always points towards the higher $A$-level.

**highlight** [*see also*: emphasize, stress, underline, underscore] This highlights the nontrivial nature of the choice of penalty.

**highly** [= very] It is highly likely that if one of the $X$'s is exchanged for another, the inequality fails. • It is generally a highly nontrivial question whether..... • a highly informative book

**hinder** [= make sth difficult] There are other problems with this example which would hinder any attempt to follow the proof given here too closely.

**hinge** [on sth; = depend entirely on sth] The construction of the factorizations hinges on the existence of critical subspaces.

**hitherto** [= until now; *see also*: before, previously] In this section we consider a hypothesis which implies many of the very strong results hitherto only known for strong contractions. • We are pleased to be able to offer this simple version of a technique which has hitherto been associated primarily with finite simple groups.

**hold** [*see also*: apply, true, valid, force] All our estimates hold without this restriction. • The desired inequality holds trivially whenever $A > 0$. • In this section we investigate under what conditions the converse holds. • An obvious question to ask is whether the assertion of Theorem 1 continues to hold for..... • Equality holds ⟨occurs⟩ in (9) if..... • This attempt is doomed because the homogeneity condition fails to hold. [= The attempt is certain to fail] • The first author holds a Rockefeller Foundation fellowship. • He held the Courant Chair at New York University for three years before his retiring. • In the year 2000 ⟨In 2000⟩, two important number theory conferences were held at Princeton University. • The conference was held December 5–9, 2018 at Warsaw University. • The conference was held at Warsaw University (December 5–9, 2018). • The conference was held at Warsaw University, December 5–9, 2018. • The conference was held at Warsaw University from November 25 to December 9, 2018.

**honour** [amer. honor] We will call this order the *M-order* in honour of Mitchell.

**hope** **1** This leaves the hope that a ratio theorem may persist in a more general setting. • But there is some hope that one could use the higher-order theory pioneered by Gowers.
**2** [*see also*: expect, expectation] A simple argument shows that we cannot hope to have $Df = 0$. • We cannot hope to say anything about the structure of each isotropy factor as a system in its own right. • Almost everywhere convergence is the best we can hope for. • Specifically, one might hope that a clever application of something like Choquet's theorem would yield the desired conclusion. • If nothing else, I hope to convince my readers that Segal's theorem deserves

recognition as a profound contribution to Gaussian analysis. • It is hoped that a deeper understanding of these residues will help establish new results about the distribution of modular symbols.

**hopeless** [*see also*: impossible, impracticable] It seems hopeless to classify positive sign-universal forms in five or more variables.

**hopelessly** Neighbourhoods of points in these spaces appear at first glance to have a nice regular structure, but upon closer scrutiny, one sees that many neighbourhoods contain collections of arcs hopelessly folded up.

**hospitality** We would like to express our thanks to all of these institutions for their hospitality and support. • This research was initiated when the first author was visiting the University of Alberta in the summer of 2008; the financial support and kind hospitality are gratefully acknowledged.

**how** We have to keep track of how the constant $K$ depends on the domain $D$. • A natural question is how sharp the bounds given in Theorem 6 are. • Another topic of great interest is how much of adjunction theory holds for ample vector bundles. • Observe how the completeness of $L^2$ was used to guarantee the existence of $f$. • How many of them are convex? • How many such expressions are there? • How many entries are there in this section? • How many multiplications are done on average?

**however** [*see also*: but, though, nevertheless, matter] **1** In this section, however, we shall not use it explicitly. • That approach was used earlier in [2]. There, however, it was applied in simply connected regions only. • [Avoid using "however" as a simple substitute for *but*.]
**2** This implies that however we choose the points $y_i$, the intersection point will be their limit point. [= no matter how we choose] • However small a neighbourhood of $x$ we take, the image will be..... • Then $M_n(x) = 0$ for every $x$, however large.

**hypothesis** [*pl.* hypotheses; *see also*: assumption, conjecture] We show that one can drop an important hypothesis of the saddle point theorem without affecting the result. • The hypothesis $f(0) \neq 0$ causes no harm in applications, for if..... • Assume, in addition to the hypotheses of Exercise 4, that..... • We now bound $v$ on ⟨under⟩ the hypothesis $H_m$. • In fact, we shall prove our result under the weaker hypothesis that $W$ is weakly bounded, rather than just bounded, on an infinite subset of $G$. • ....., and this is strictly positive by hypothesis. • However, a slight strengthening of the hypotheses does give us a regular measure. • We establish our results both unconditionally and on the assumption of the Riemann Hypothesis. • In geometric language, the hypothesis is that $F$ is.....; part of the conclusion is that $F$ satisfies..... • Suppose, as an inductive hypothesis, that..... • the hypothesis of positivity = the positivity hypothesis • the hypothesis of $F$ being projective

# I

**idea** [*see also*: concept, notion, objective, definiteness] Some of the basic ideas from functional analysis are also included. • The idea behind our use of the map $\sigma$ is that..... • The idea is to relax the constraint of being a weight function in Theorem 3. • It is this idea that underlies some of the results of [2]. • This idea goes back at least as far as [3]. • Apart from a few embellishments necessitated by some technical difficulties, the ideas differ very little from those used to prove Lemma 4. • Our proof of Theorem 2 is based upon ideas found in [BN]. • The proof makes use of many of the ideas of the general case, but in a simpler setting. • Although the idea is simple, its implementation is complicated by the fact that..... • It is a pleasure to thank R. Greenberg for bringing his criterion for..... to our attention, and for generously sharing his ideas about it. • We shall draw heavily on ideas from [3]. • To fix ideas, assume that $M$ is a pentagon. • a stimulating ⟨clever/original/alternative/basic⟩ idea

**identical** [*see also*: same] The obvious rearrangement reveals the right side to be identical with (8). • The following has an almost identical proof to that of Lemma 2.

**identically** the identically zero map

**identify** As a first step we identify the image of $\Delta$. • Letting $m \to \infty$ identifies this limit as $H$. • Using the standard inner product we can identify $H$ with $H^*$. • The tangent space to $N$ at $x$ is identified with $M$ via left translation. • We henceforth identify $SC(K\times K)$ with a $*$-subalgebra of $L^\infty(X\times X)$. • The resulting metric space consists precisely of the Lebesgue integrable functions, provided we identify any two that are equal almost everywhere.

**identity** Clearly, $M$ is a Banach algebra having for its identity the unit point mass at 0.

**i.e.** [= that is; *see also*: namely] These are precisely the linear functionals which also preserve multiplication, i.e., $f(ab) = f(a)f(b)$. [The comma after *i.e.* is optional.] • [Note the difference between *namely* and *that is*: while *namely* introduces specific or extra information, *that is* (or *i.e.*) introduces another way of putting what has already been said.]

**if** [*see also*: when, whenever, whether, provided] The map $F$ is said to be *proper* if $G$ is dense. [*Note*: no comma before *if* here.] • By deleting the intervals containing $x$, if any, we obtain..... • There are few, if any, other significant classes of processes for which such precise information is available. • The only thing to check is that maps compose correctly; but this is an easy, if tedious, verification. • We can assume, by decreasing $n$ if necessary, that.....

**ignore** [*see also*: disregard, neglect] For convenience we ignore the dependence of $f$ on $g$. • The reader may wonder why we have apparently ignored the possibility of obtaining a better lower bound by considering..... • In fact, we will only prove this for $a > 1$, but we can safely ignore the other cases as Mattila already proved the sharp bound for $m_d$ for low dimensions. • [Do not write "We ignore if $A$ exists" if you mean *We do not know if $A$ exists.*]

**illegitimate** [*see also*: justify] In the preceding proof, the appeal to the dominated convergence theorem may seem to be illegitimate since.....

**illuminate** These three results lead to several illuminating pieces of information about the (insufficiently studied) Berger property in general spaces.

**illustrate** [*see also*: show, demonstrate, exhibit, display] To illustrate, let us state the following corollary. • These patterns are illustrated in Fig. 4. • The advantages of this formulation will be amply illustrated in the following sections. • In addition to illustrating how our formulas work in practice, it provides a counterexample to Brown's conjecture. • The two examples, $E_1$ and $E_2$, differ by only a single sequence, $e$, and they serve to illustrate the delicate nature of Theorem 2. • The following result illustrates the utility of (3). • Before we move on to our main theme, we shall illustrate our techniques by an example of an isometric elementary operator. • Before beginning the proof, which is notationally complicated, we first illustrate the strategy in an example.

**illustration** [*see also*: example] By way of illustration, here is an example of..... • We can now pose a problem whose solution will afford an illustration of how (5) can be used.

**image** the image of $A$ under $f$ = the $f$-image of $A$ • the inverse image = the preimage

**immediate** The first conclusion is immediate from Theorem 1. • Now (3) is clear. As for (4), it is an immediate consequence of Lemma 6. [= Concerning (4)]

**immediately** However, we immediately encounter the problem of nonregularity of the data. • It is not immediately obvious what this generalization has to be. • We can immediately use one of these poles to cancel out ⟨compensate for⟩ the effect of the pole at $s = 0$. • This follows immediately from (8) coupled with the fact that.....

**implement** The most direct way in which one might try to implement this strategy is to let $G$ be a free group. • This procedure, once implemented, can thereafter be applied with great effectiveness.

**implementation** Although the idea is simple, its implementation is complicated by the fact that..... • The proof of Theorem 5 is an implementation of the following naive idea.

**implication** [*see also*: consequence] The implication one way follows from Theorem 2. • None of the one-way implications in (1.1) can be reversed. • The rigidity inequality has a strong implication when the fundamental group of $P$ is nontrivial. • An extensive development of this theory and its implications can be found in [T]. • We first prove the direct implication. • the converse implication = the converse

**implicit** [*see also*: imply] The following lemma, crucial to Theorem 2, is also implicit in [4]. • This is essentially implicit in [BC] but we cannot quite quote the result we need. • Also, we will take the qualification "for all sufficiently small $\varepsilon$" to be implicit in all of our statements below. • The constants implicit in the symbol $\approx$ depend on $r$.

**imply** [*see also*: follow, entail, implicit] Then $x = y$ and $y = z$ implies $x = z$. [OR imply] • Note that $M$ being cyclic implies $F$ is cyclic. • However, if $B$ were omitted in (1), the case $n = 0$ would imply $Nf = 1$, an undesirable restriction. • Our present assumption implies that the last inequality in (8) must actually be an equality. • That (2) implies (1) is contained in the proof of Theorem 1 of [4]. • The continuity of $f$ implies that of $g$. • We maintain the convention that implied constants depend only on $n$. • The equivalence of (a) and (b) is trivially implied by the definition of $M$.

**importance** [*see also*: role, significance, relevance, interest] Another group of importance in physics is $SL_2(R)$. • The next two theorems reveal the importance of this concept. • of considerable ⟨critical/crucial/fundamental/outstanding/particular/primary/increasing/minor/secondary⟩ importance

**important** [*see also*: main, crucial, principal, major, significant] It is important to notice some of the weaknesses inherent in the above approach. • Where it is important to distinguish different norms on $E$, we shall use the notation..... • We show that one can drop an important hypothesis of the saddle point theorem without affecting the result. • Important analytic differences appear when one writes down precisely what is meant by..... • It has some basic properties in common with another most important class of functions, namely, the continuous ones. • These extra stipulations are unimportant, but are given for definiteness.

**impose** [*see also*: force] Theorem 7 imposes a quantitative restriction on the location of the zeros of..... • This theorem removes the restriction to convex regions which was imposed in Theorem 8.

**impossible** [*see also*: impracticable, hopeless] It is impossible to predict the eventual outcome of the process. • ....., which is impossible. [NOT "what is impossible"] • But....., it being impossible to make $A$ and $B$ intersect. [= since it is impossible to make]

**impracticable** [*see also*: impossible, hopeless] It becomes impracticable to compute the zeros of $F$ for degrees greater than 6; in any event, deciding whether the divisors found in this way represent irreducible curves becomes increasingly difficult.

**improve** [sth; on sth; *see also*: enhance, refine, sharpen, progress, better] The following example shows that the degree of smoothness predicted by Theorem 6 cannot be improved on. • The condition..... can be improved by employing a strategy similar to that underlying the proof of Theorem 2. • We note in passing that Fox has subsequently improved Barnes's result by showing that..... • The first estimate worsens as $n$ increases, whereas the second estimate improves.

**improvement** [*see also*: progress, refinement] We now show the following improvement on (2). • The basic improvement is the smoothness condition on $G$ given in (6). • The object of this paper is to obtain improvements in two cases, namely for forms of degree 7 and 11. • There has since been a series of improvements, of which we briefly mention the work of Levinson. • The author is grateful to the referee for a number of helpful suggestions for improvement in the article. • The author thanks the referee for recommending various improvements in exposition. • a considerable ⟨major/marked/radical/remarkable/significant/minor/slight⟩ improvement

**impulse** [*see also*: inspiration, motivation] An original impulse for this investigation came from the study of.....

**in** We put $b$ in $R$ unless $a$ is already in. • This equation has a solution in integers for $N > 7$. • Expand $f$ in powers of $x$. • It is this point of view which is close to that used in $C^*$-algebras. • The maps $f_t$ are homotopic, so $f_1$ and $f_0$ induce the same maps in homology. • These intervals are disjoint from all those used in defining $J_1$. • In doing this we will also benefit from having the following notation. • This also resolves the ambiguity introduced earlier in choosing an order of the lifts of $U$. • In calling (2) the Borell inequality we are following the authors of [5]. • Each $A_i$ meets $A$ in a finite set. [= $A_i \cap A$ is finite] • Then one $Y_i$ can intersect another only in one point. • Values computed for the right side of (2) were rounded up in the fourth decimal place. • Then $F$ varies smoothly in $t$. • Thus $F_n(x, y)$ converges to $F(x, y)$ uniformly in $x$. • Clearly, $A_j$ is increasing in $j$. • The Tits cone may change (e.g. in dimension) under extension or restriction of $W$. • The word ends in $a$. • in diagonal form • in geometric language • In less precise language, the requirement is that the two angles are the same in size and in orientation. • Then $P$ is the product of several integer factors of about $x^n$ in size. • The set $A$ is roughly triangular in shape. • The proof proper [= The actual proof] will consist of establishing the following statements in sequence. • convergence in probability ⟨in distribution⟩ • Less than 1 in $p$ of its points will result in a quartic with ideal class number $p$. • Theorem 3 is remarkable in that considerably fewer conditions than in the previous theorems ensure universality. • As $M$ is ordered, we have no difficulty in assigning a meaning to $(a, b)$. • The prime 2 is anomalous in this respect, in that the only edge from 2 passes through 3. • This is where the notion of an upper gradient comes in. • The set $A$ is obtained from $B$ by removing a neighbourhood of $C$ and gluing in a copy of $D$.

**inability** A shortcoming of our method is the inability to compare three or more progressions.

**incidentally** [*see also*: by-product, pass, aside, way] Incidentally, our computation shows that..... • Incidentally, the question of whether $K(E)$ is amenable for specific Banach spaces $E$ seems to have received almost no attention in the literature.

**include** [*see also*: embrace, cover, subsume, comprise, contain] We shall only use (2), but have included (1) for completeness. • Some of the basic ideas from functional analysis are also included. • The proof is mainly included to keep the exposition as self-contained as possible. • The final lemma is due to F. Black and is included with his kind permission. • We begin by describing the class of functions $f$ considered, which includes the special cases quoted above. • Examples of Hrushovski classes of finite structures include the following:..... • This paper enlarges the class of continua with this property, namely to include those which..... • Let $Q$ denote the set of positive definite forms (including imprimitive ones, if there are any). • Let $K$ and $L$ be quasivarieties such that $K$ is properly included in $L$. • from stage $A$ up to, but not including, stage $B$

**incomparable** [with sth, to sth] By genericity of $P$ there is an $x$ incomparable with both $y$ and $z$.

**incompatible** [with sth] However, rigidity is incompatible with the existence of an absolutely continuous component.

**incomplete** From the standpoint of linear programming, the above discussion is incomplete in that it throws no light upon the question whether the function $F$ attains its infimum.

**incorrectly** In [F] it is incorrectly stated that the unimodality conjecture is open for Weyl groups.

**increase** **1** an increase of 5% ⟨a 5% increase⟩ in the cost of living • A small percentage reduction in the cost of materials resulted in a significant increase in profit. • The pressure increases are significantly below those in Table 2. • a considerable ⟨major/marked/ significant/substantial/modest/ small/sharp/steady/sixfold/overall⟩ increase

**2** [*see also*: enhance, grow, raise] Obviously, $G_n$ increases to $G$ as $n \to \infty$. • Sales increased almost fourfold in this period. • The budget has increased by more than a third. • Between 1929 and 1975 Australian income per person increased at an average annual rate of 0.96%. • Indeed, there is reason to suspect that difficulties could increase with increasing $n$. • We adopt the convention that the first coordinate $i$ increases as one goes downwards, and the second coordinate $j$ increases as one goes from left to right. • The index increases by 1 when the path is crossed from right to left. • The numbers inserted in $L$ must increase strictly down each column. • Note that a decrease in $b$ causes $f$ to increase. • Also, $F$ does not increase distances. • There has recently been increasing interest in the theory of..... • It becomes impracticable to compute the zeros of $F$ for degrees greater than 6; in any event, deciding whether the divisors found in this way represent irreducible curves becomes increasingly difficult. • Indeed, as $n$ increases, it becomes increasingly rare for a manifold to be a hyperplane section of another projective manifold.

**indebt** I am greatly indebted to S. Brown for this example. • We are indebted here to Villani's account (see [2]) of a standard generalization of convex conjugacy.

**indeed** Note that this lemma does not give a simple criterion for deciding whether a given topology is indeed of the form $T_f$. • We now prove..... Indeed, suppose otherwise. Then..... • We leave to the reader the proof that $f$ is indeed self-adjoint, and not merely symmetric. • Many of these results are known, and indeed they go back to the seminal paper of Dixmier [D] of 1951.

**indefinitely** Suppose that the process continues indefinitely.

**independence** [of sth from sth] In Lemma 6.1, the independence of $F$ from $V$ is surprising at first.

**independent** [of sth, *not*: "on sth"] ....., the constant $C$ being independent of $n$. • Note that $F$ is independent of the choice of the family $S$. • Indeed, it is routine to verify that the index so constructed is independent of the choices made. • It turns out that this is independent of the representations taken (as long as they are faithful). • The two notions of rank are independent of each other. • We now prove a result that may be of independent interest. • In the case where $p > 1$, the result seems to be new, and may have independent interest. • The basis-independent way of saying this is as follows.

**independently** Similar results were obtained independently in [AB]. • This proof is similar to the one offered here, but we wish to note that ours was conducted independently and posted on arXiv in 2016. • All our results hold independently of whether the underlying field is $R$ or $C$. • Note that $C$ is a random variable which is well defined independently of the value of $r$. • Here $Q_j$ for $j = 1, ..., n$ are drawn independently, conditional on the values generated at level $m$.

**indeterminate** We write $V[[h]]$ for the space of formal power series in an indeterminate $h$.

**indicate** [*see also*: demonstrate, show, point, express, convey] ....., where the prime indicates that only terms with $p > 0$ may appear. • We shall write "a.e. $[\omega]$" whenever clarity requires that the measure be indicated. • We now indicate some of the inherent difficulties. • The proof will only be indicated briefly. • We now show that $G$ is in the symbol class indicated. • for $k$ in the indicated range

**indication** The proof is nonconstructive and gives no indication of what the exceptional set may look like.

**indistinguishable** Functions which are equal almost everywhere are indistinguishable as far as integration is concerned.

**individual** [*see also*: particular, single, specific, unique] Here the interesting questions are not about individual examples, but about the asymptotic behaviour of the set of examples as one or another of the invariants (such as the genus) goes to infinity.

**individually** Although individually these systems can still be quite complicated, a possibly more tractable task is to describe their possible joint distributions.

**induce** The maps $f_t$ are homotopic, so $f_1$ and $f_0$ induce the same maps in homology. • The induced homomorphism is multiplication by 2. • On $TK$ we set up [= introduce] the symplectic structure induced by the metric.

**induct** [*see also*: induction] To prove partition regularity of the generalized Pythagorean equation we induct on the number of colours as in our proof of Schur's theorem.

**induction** [*see also*: induct] The proof is by induction on $n$. • By decreasing induction on $p$,..... • We show that..... by reverse induction on $i$, starting at $i = n$ and working down to $i = 0$. • We proceed by induction. • If we apply induction to (3) we see that..... • For the base step of the induction, consider a vertex $t$ in $A$. • We may require that the point $P$ lie in one of the trees constructed before or during the $i$th stage of the induction. [Note the subjunctive *lie*.] • Induction shows that if.....

**inductive** This example indicates that the inductive argument in the proof of Theorem 1 is unavoidable. • Suppose, as an inductive hypothesis, that.....

**inductively** Thanks to Lemma 2, we can now modify the proof of Theorem 3 by inductively constructing five sequences..... • Define two polynomials $f$ and $g$ inductively as follows.

**inequality** opposite ⟨reverse⟩ inequality • inequality in the opposite direction • Strict inequality can occur ⟨hold⟩ in (8) only if..... • The condition (8) holds with strict inequality.

**infer** [*see also*: conclude, deduce, follow] From (5) we infer that..... • We have shown that....., whence it is readily inferred that..... • It can be inferred from known results that these series at best converge conditionally in $L^p$. • Now apply Theorem 4.1 of [B] to infer the strong convergence at $e^{i\theta}$ of the Fourier series for $\Phi$.

**infinite** Leray and Schauder laid the foundations for the generalization of the Lefschetz index to infinite dimensions. • Thus $F$ vanishes to infinite order at $x$. • Note that both sides of the inequality may well be infinite. • The sum in (2), though formally infinite, is therefore actually finite. • We consider every subset of $N$, whether finite or infinite, to be an increasing sequence.

**infinitely** The known results show that the situation is infinitely more complicated there than in $L^2$. • We offer numerical evidence to support a conjecture that there exist infinitely many primes of this type. • infinitely often • an infinitely differentiable function

**infinity** Here the interesting questions are not about individual examples, but about the asymptotic behaviour of the set of examples as one or another of the invariants (such as the genus) goes to infinity.

**influence** [*see also*: affect] Influenced by (2) of Theorem 3, Danes (1989) suggested that.....

**informally** Informally said, gaps go to gaps. • Stated informally, continuous functions of measurable functions are measurable.

**information** [*see also*: data, material] Theorem 1 gives information on ⟨about⟩..... • Also, wherever possible, we work with integer coefficients, enabling us to obtain information about torsion. • The main information conveyed by this formula is that..... • For background information, see [5]. • This accords with the intuition that as we pass down the coding tree, we find out more and more detailed information about the ordering actually represented. • To obtain finer information, we let $X$ depend on the height $H$ of the elliptic curve being modelled. • The interested reader is referred to [4] for further information. [Note the double $r$ in *referred.*] • Another proof (yielding more information) can be found in [GH]. • The survey article [5] by Diestel contains a wealth of information about the Dunford-Pettis property. • Intuitively, entropy of a partition is a measure of its information content—the larger the entropy, the larger the information content. • These three results lead to several illuminating pieces of information about the (insufficiently studied) Berger property in general spaces. • [Note that *information* has no plural and does not appear with *an.*]

**informative** a highly informative book

**ingredient** [*see also*: element, feature, detail, characteristic, point] The main ⟨crucial/key⟩ ingredient in the proof of..... is..... • The method sketched in Section 3 of [Con] carries through with our choice of $\psi = \psi_1 + \psi_2$, but there is one extra ingredient worthy of mention.

**inherent** [*see also*: essential, basic, intrinsic] It is important to notice some of the weaknesses inherent in the above approach. • We now indicate some of the inherent difficulties.

**initially** [= at first] The function $f$ (initially defined on $C_0$) determines a functional on $S$.

**initiate** This research was initiated when the first author was visiting the University of Alberta in the summer of 2008; the financial support and kind hospitality are gratefully acknowledged.

**innermost** the innermost sum in (4)

**inordinately** [= unusually, excessively] We also need the following technical lemma, which asserts the rarity of numbers with an inordinately large number of prime factors.

**input** The original construction was an algorithm that took as input a finite presentation for a group $Q$ and gave as output a presentation for the group $G(Q)$.

**inquire** It is natural to inquire about the structure of this group.

**insert** [*see also*: plug, put, place] Inserting additional edges destroys no edges that were already present.

**inside** [*see also*: within] Inside $U$, the zeros are also quantitatively restricted. • The intervals we are concerned with are either completely inside $A$ or completely inside $B$. • the inside diameter

**inspection** [*see also*: check, examination, scrutiny, verification] The theorem is false without the assumption that....., as an inspection of Example 3 shows. • A close inspection of the proof reveals that..... • a careful ⟨detailed/thorough/brief/routine⟩ inspection

**inspiration** [*see also*: motivation, impulse] The inspiration for Theorem 1 was the paper of Snow. • the main source of inspiration

**inspire** [*see also*: motivate, impulse] This inspired us to take a fresh look at all the results in [BG].

**instead** [*see also*: place, replace, rather] Instead of using the Fourier method we can multiply..... [NOT "Instead using"] • Instead of dealing with lines one by one, we deal with collections of lines simultaneously. • The proof we give is based instead on Galois theory. • Strictly speaking, we should write something like $a(l, m, n)$ to reflect the dependence; we shall rely upon context instead. • In the paper under review the authors study functions which need not lie in the class $B$, but are subject instead to conditions concerning regularity of growth. • Rather than working directly with $V(s)$, we shall instead consider the following two general integrals:..... [OR Rather than work]

**institution** We would like to express our thanks to all of these institutions for their hospitality and support.

**instructive** It is instructive to compare this bound with what one can deduce from The- orem 4.1.

**integer** Then $F$ has simple zeros with residue 1 at the integers. • a polynomial with integer coefficients

**integrable** a $p$-integrable function • the space of $p$th power integrable functions

**integral** **1** the integral of $f$ on $A$ ⟨over $A$⟩
**2** the integral multiples of $2^{-n}$

**integrate** We now integrate around the circle ⟨over $|x| < 1$ /on $|x| < 1$⟩ to obtain.....

**integration** We see with the aid of an integration by parts that..... • Theorem 2 makes it legitimate to apply integration by parts. • By $k$-fold integration by parts,..... • This bound is integrable and on integration one again obtains the same form of..... • Functions which are equal almost everywhere are indistinguishable as far as integration is concerned. • Without losing any generality, we could have restricted our definition of integration to integrals over all of $X$. [NOT "Without loosing"] • Recently proofs have been constructed which make no appeal to integration. • To justify the interchange of summation and integration, consider..... • The interchange in the order of integration was legitimate, since..... • One is tempted to reverse the order of integrations but that is illegitimate here.

**intend** [*see also*: aim, design] We intend to analyze ideals of the form $\langle x_i \rangle$ for $i \in N$. • We do not intend to maintain this level of precision in all of our results. • Condition (c) is intended to give us firm control over..... • Thus the paper is intended to be accessible both to logicians and to topologists. • This volume was originally intended as a celebration volume marking the occasion of N. Wiener's seventieth birthday.

**intention** [*see also*: aim, purpose, objective, design] It has not been our intention to claim the originality of this result.

**intentionally** [*see also*: deliberately] This terminology is intentionally provocative.

**interact** It is also natural to enquire about how factorization and interpolation interact at the level of particular families of inequalities.

**interchange** [*see also*: exchange, swap] **1** To justify the interchange of summation and integration, consider..... • The interchange in the order of integration was legitimate, since.....
**2** It follows, by interchanging the roles of $X$ and $Y$, that..... • The lower limit is defined analogously: simply interchange sup and inf in (1).

**interchangeably** We shall write $H(x,t)$ and $H_t(x)$ interchangeably.

**interest** **1** [*see also*: importance] Interest in crossed $G$-modules stems from algebraic topology. • The interest of the lemma is in the assertion that..... • There has recently been increasing interest in the theory of..... • This article features results in both spectral theory and operator ergodic theory made possible by a recent renewal of interest in the consequences of James's inequalities. • In this paper we wish to renew an interest in the systematic study of the relationships between cardinal invariants with respect to Borel morphisms. • Our interest in extending Strang's results comes from the fact that..... • The author's interest in this problem was recently rekindled by a conversation with David Lees. • The theorem gains in interest if we realize that..... • The usefulness and interest of this correspondence will of course be enhanced if there is a way of returning from the transforms to the functions, that is to say, if there is an inversion formula. • This class is wide enough to include a number of examples of interest. • The basic problem of interest is to derive the asymptotics of the number $N_T(P,E)$ of circles in the packing $P$ which intersect a bounded set $E$ and have curvature $< T$. • It is therefore of interest to look at the asymptotic behaviour of..... • Of particular interest to us is $S(5,3)$. • Canonical products are of great interest in the study of entire functions of finite order. • The polynomials $R_i$ do not have this stability property, and are therefore of little interest. • We now prove a result that may be of independent interest. • In the case where $p > 1$, the result seems to be new, and may have independent interest. • The reason for our attention to these questions, beyond their intrinsic

interest, is that, in certain circumstances, they provide a way to prove unique ergodicity results for groups. • The case $n = 2$ is of no interest since..... • We have made modifications in the interest of readability.
**2** We shall be interested in seeing whether.....

**interesting** We now prove a lemma which is interesting in its own right. • The preceding proof contains a result which is interesting enough to be stated separately. • Galois correspondences are uninteresting from the dynamical point of view.

**interestingly** Interestingly, it turns out that there are examples of..... • Perhaps more interestingly, consider the abelian group $M$ which is a direct sum.....

**intermediate** In this paper, we develop a new approach that is intermediate between these two extremes.

**interplay** The interplay of these two kinds of sets will be crucial in the proof of our main theorem.

**interpret** [*not*: "interprete"] Now (1) can be interpreted to mean that $A = B$. • Theorem 3 may be interpreted as saying that $A = B$, but it must then be remembered that..... • Nevertheless, in interpreting this conclusion, caution must be exercised because the number of potential exceptions is huge. • The right-hand members of (1) and (2) are to be interpreted by continuity when $f$ is in $Z$.

**interpretation** This inequality admits of a simple interpretation. • The interpretation of $\sigma$ is that for every $x$,..... • Of course, a literal interpretation of (1) makes no sense. • This interpretation does little, in sum, to add to our understanding of.....

**interrupt** In this section we gather some miscellaneous results that are more or less standard. These will be used to calculate the constants $c_\star(\alpha, \beta)$, and we place them here to avoid interrupting the forthcoming arguments.

**intersect** [*see also*: meet] The basic problem of interest is to derive the asymptotics of the number $N_T(P, E)$ of circles in the packing $P$ which intersect a bounded set $E$ and have curvature $< T$. • The two sets intersect in at most three points. • Then one $Y_i$ can intersect another only in one point. • The two lines intersect at an angle of ninety degrees.

**intersection** Since $M$ is an intersection of closed subspaces, it is a closed subspace of $E$. • Let $M$ be the intersection of the sets $M_i$. • We shall use the symbol $\cap$ to represent intersection. • This implies that however we choose the points $y_i$, the intersection point will be their limit point. • The local homeomorphism property of $F$ does not, however, prevent it from self-intersections.

**interval** We claim that, by setting $w$ to zero on this interval, the value of $F(w)$ is reduced. • Let $2I$ denote the interval concentric with $I$ but of twice its length. • We can partition $[0, 1]$ into $n$ intervals by taking..... • As $t$ runs from 0 to 1, the point $f(t)$ runs through the interval $[a, b]$. • We denote the left-hand such interval by $I^L$ and the right-hand one by $I^R$. • The parameter interval was here taken to be $(0, 1)$. • a curve parametrized on the interval $[0, 1]$ • the other end of the interval • non-overlapping intervals • an interval of successive integers • The zeros appear at intervals of $2m$.

**intimately** [*see also*: closely] The above-mentioned measure is of course intimately related to the geometry of the real line.

**into** We must now bring dependence on $d$ into the arguments of [9]. • The proof will be divided into a sequence of lemmas. • We can factor $g$ into a product of irreducible elements. • Other types fit into this pattern as well. • This norm makes $X$ into a Banach space. • We regard (1) as a mapping of $S^2$ into $S^2$, with the obvious conventions concerning the point $\infty$. • We can partition $[0, 1]$ into $n$ intervals by taking..... • The map $F$ can be put ⟨brought⟩ into this form by setting..... • The problem one runs into, however, is that $f$ need not be..... • But if we argue as in (5), we run into the integral....., which is meaningless as it stands. • Thus $N$ separates $M$ into two disjoint parts. • Now (1) splits into the pair of equations..... • Substitute this value of $z$ into ⟨in⟩ (7) to obtain..... • Replacement of $z$ by $1/z$ transforms (4) into (5). • This can be translated into the language of differential forms. • Implementation is the task of turning an algorithm into a computer program.

**intractable** [*see also*: reach] This conjecture also appears intractable at present.

**intricate** [= very complicated or detailed; *see also*: elaborate, involved, sophisticated] It turned out to have an extremely intricate structure.

**intrinsic** Our method has the disadvantage of not being intrinsic. • The reason for our attention to these questions, beyond their intrinsic interest, is that, in certain circumstances, they provide a way to prove unique ergodicity results for groups.

**introduce** [*see also*: set up] We find ourselves forced to introduce an extra assumption. • In order to state these conditions succinctly, we introduce the following terminology. • We now introduce the algebras we shall be concerned with. • This motivated the second author to introduce the notion of..... • More specialized notions from Banach space theory will be introduced as needed.

**introduction** The projection technique requires the introduction of an appropriate homomorphism. • This suggests the introduction of the differential operator $A =$..... • We now come to the theorem which was alluded to in the introduction of the present chapter.

**intuition** It is useful to consider some rather simple examples to gain some intuition. • This accords with the intuition that as we pass down the coding tree, we find out more and more detailed information about the ordering actually represented. • Our main finding in this paper is that this intuition turns out to be erroneous.

**intuitively** Intuitively, entropy of a partition is a measure of its information content—the larger the entropy, the larger the information content.

**invalid** [*see also*: fallacious, erroneous, fail] This argument is invalid for several reasons.

**invariant** Clearly, $F$ leaves the subspace $M$ invariant. • Hence $F$ is invariant under $\phi$. • Thus $F$ is $G$-invariant ⟨invariant under the action of $G$⟩. • This set is clearly translation invariant. • Here the interesting questions are not about individual examples, but about the asymptotic behaviour of the set of examples as one or another of the invariants (such as the genus) goes to infinity.

**inverse** [*see also*: converse, opposite, reverse] Then $F$ is the homeomorphism $X \to Y$ inverse to $G$. • No $x$ has more than one inverse. • We use upper case letters to represent inverses of generators. • the inverse image = the preimage

**investigate** [*see also*: examine, explore, study, test] In this section we investigate under what conditions the converse holds. • The above construction suggests investigating the solutions of..... • Some researchers have also tried investigating the growth rate of $s_n$ numerically. • The situations with domains other than sectors remain to be investigated.

**investigation** [*see also*: study, research, analysis, exploration] We shall pursue our investigation of conservation laws in Section 5. • Theorem B is the main result of our investigation of stable ergodicity which we made in collaboration with A. Burks. • This paper, for the most part, continues this line of investigation. • An original impulse for this investigation came from the study of..... • The results have been encouraging enough to merit further investigation. • So one is naturally led to an investigation of..... • a careful ⟨close/detailed/extensive⟩ investigation

**invoke** [*see also*: appeal, call upon] Finally, case (E) is completed by again invoking Theorem 1. • This allows us to invoke Theorem B to produce an ultrafilter satisfying.....

**involve** [*see also*: entail, necessitate, require] Our proof involves looking at..... • This involves no loss of generality. • The analysis of PDOs involves the geometry of $T^*M$. • The terms involving $a \neq 1$ contribute $O(n)$, since..... • Perhaps the most important problem involving $f$-vectors is whether or not John's conditions extend to spheres. • A computational restraint is the algebraic number theory involved in finding these ranks, which will typically be more demanding than in our example of Section 1. • The crucial set-theoretic properties involved are the following. [Note the position of *involved*; placed before *properties*, it would mean "complicated".]

**involved** [*see also*: difficult, hard, complex, complicated, intricate] It seems likely that the arguments would be much more involved. • Besides being very involved, the proof gives no information on.....

**inward(s)** the inward pointing unit normal to $\partial M$ • [In most adverbial uses, *inward* and *inwards* are interchangeable; as an adjective, the more standard form is *inward*: *the inward layer.*]

**irrelevant** [to sth; *see also*: unimportant] We shall see later that the values of $h(n)$ for large $n$ are irrelevant to the problem. • The choice of $A$ is clearly irrelevant, so assume $A = 0$.

**irrespective** [of sth; *see also*: regardless] The method works irrespective of whether $A$ or $B$ is used.

**isolate** Condition (ii) in the following definition isolates a rather subtle special property of a semidual pair of cones which plays an important role in Section 5.

**issue** [*see also*: matter, subject, topic, point] One delicate issue is that it is not known whether..... • To get around this delicate issue, we shall separate the variables $s$ and $u$. • Addressing this issue requires using the convergence properties of Fourier series. • However, we prefer to avoid this issue altogether by neglecting the contribution of $B$ to $S$. • Since $RG$-modules in general need not be completely reducible, indecomposability becomes an important issue. • a central ⟨critical/crucial/key/main/major/wider/minor/side/basic/fundamental/complex⟩ issue

**it** [*see also*: this] It is Proposition 8 that makes this definition allowable. • It is this point of view which is close to that used in $C^*$-algebras. • It is these buffers that make it easy to see that the limit continuum is contractible. • It is when $A$ is nonassociative that we realy need all three relations. • It is a theorem of Watanabe that $A$ is an ideal in $A'$ if and only if..... • It was only later that Vick noticed the connection with the presentation given above. • Of course, it is tacitly understood that it is this measure that is really under discussion. • It has to be assumed that..... • Theorem 2 makes it legitimate to apply integration by parts. • We leave it to the reader to verify that..... • We shall find it convenient not to distinguish between two such sequences which differ only by a string of zeros at the end. • But....., it being impossible to make $A$ and $B$ intersect. [= since it is impossible to make] • Then $a = b$. This/It implies that..... • [“It” can refer back to the whole sentence, but sometimes may be confusing (e.g. “Then $a$ is a boundary point. It implies..... •”), so in general “This” is preferable.]

**item** [*see also*: point, matter, issue] Since most of the results presented are quite classical (the novelty lies in the arrangement, and some of the proofs are new), I have not attempted to document the source of every item. • The third item is proved similarly.

**iterate** **1** One can iterate Theorem 2 to conclude that.....
**2** The iterates eventually reach the value 1.

**itself** [*see also*: alone] This itself does not produce a solution of (1), but an additional hypothesis such as the Palais-Smale condition does provide such a solution. • We have to show that $M$ itself is an algebra. [OR $M$ is itself an algebra.] • But $H$ itself can equally well be a member of $S$. • Now $f$ is independent of the choice of $\gamma$ (although the integral itself is not). • Thus in $G$ itself there can be no such equivalences with $f(r) = 2$. • Note that property (i) by itself guarantees that $\mu_G$ must be the uniform measure. • In itself, property (i) is not sufficient for (1) to hold. • [Use *by itself* when the subject *does* something; use *in itself* when the subject has (or does not have) some property.]

## J

**job** Two more triangulations will finish the job. • Finally, the union of the $E_i$ does the job. [= is as required]

**join** [*see also*: connect, relate, tie, associate] We can join $a$ to $b$ by a path $\pi$. [OR join $a$ and $b$; *not*: “join $a$ with $b$”] • Parallel lines never join. • These subsets join up to form a simple closed curve passing through $A$ and $B$.

**joint** If Marc were still alive, the present paper would surely have been a joint one.

**just** [*see also*: equally, merely, only, simply, exactly] His techniques work just as well for general $v$. • The other inequality is just as easy to prove. • When $n = 0$, (7) just amounts to saying that..... • We shall be brief here and just estimate the terms that are the most challenging. • When there is no ambiguity we drop the dependence on $B$ and write just $Y_T$ for $Y_{T,B}$. • Now, just the fact that $F$ is a homeomorphism lets us prove that..... • Can $f(x) > 1$ be replaced by just $x > 1$? • The inverse image of $A$ consists of just the basepoint of $X$. • In fact, we shall prove our result under the weaker hypothesis that $W$ is weakly bounded, rather than just bounded, on an infinite subset of $G$. • This follows from Lemma 2 just the way (a) follows from (b). • This class includes just under 3000 items.

**justify** [*see also*: legitimate, meaningful, explain, reason] To justify the interchange of summation and integration, consider..... • The last but one step is justified by the fact that.....

**juxtaposition** Concatenation of sequences is indicated by juxtaposition in the obvious way.

## K

**keep** [*see also*: leave, retain, preserve, maintain, stick] Keep only those vertices whose coordinates sum to 4. • The mapping $f$ keeps the origin fixed. • If we keep $x$ away from $\partial D$ by restricting it to a compact set $K \subset D$, then..... • The proof is mainly included to keep the exposition as self-contained as possible. • Keep in mind that we are now using algebraic notation. • We have to keep track of how the constant $K$ depends on the domain $D$.

**key** [*see also*: basic, critical, crucial, essential, main] The key observation is that if..... • The key part is to show that the submanifolds $U_k$ fit together to form a complex submanifold. • A key step in obtaining (6) is Jensen's inequality. • It supplies the key to the proof of Theorem 2. • The following lemma is the key to extending Wagner's results.

**kind** [*see also*: sort, type, form] Another kind of modification is illustrated in the next lemma. • The same kind of approach has been taken successfully to determine all regular maps of various small genera. • processes of an entirely new kind • a connection of some kind

**know** [*see also*: realize, recognize, grasp, aware] We do not know whether or not $Q(R) = R$ in this situation. • The map $f$, which we know to be bounded, is also right-continuous. • Knowing this matrix is equivalent to knowing the multiplicities of the $k_i$. • However, we know of no way of deriving one theory directly from the other. • We know of no examples where $X$ is invertible. • All the Cox maps $F$ are known to have $L(F)$ finite. • The best known of these is the Knaster continuum. • The answer is not known to us. • The only references known to the authors are [A] and [V], where the case $A = L(E)$ is settled in the negative. • Many of them were already known to Gauss. • It has long been known that..... • It has been known for some time that..... • The conjecture (now known not to be true in general) was that..... • So far it seems not to be known whether the geometric condition on $X$ can be omitted. • In particular, there is a summary of what is known about polarized pairs with small genus. • The importance of these examples lay not only in lowering the dimension of known counterexamples, but also in..... [Note that the past tense of *lie* is *lay*, not "lied".] • The following proposition is probably well known, but we do not have a reference.

**knowledge** To the best of the author's knowledge, the problem is still open. • However, to our knowledge this is not fully resolved. • Indeed, to our knowledge, cardinality restrictions on Berg spaces have received no prior attention outside the metric context. • Give a proof of Theorem 2 which requires no knowledge of the boundary values of $f$. • The knowledge of the invariant subspaces of an operator helps us to visualize its action. • We presume a basic knowledge of large cardinals and forcing. • We shall shortly use this to construct explicit annihilators without prior knowledge of $f_n$.

## L

**label** **1** The edges $F$ and $G$ have opposite labels. • The vertex $F$ has label 1.
**2** [*see also*: indicate, mark, relabel] The point $F$ is labelled 1. [OR labelled by 1.] • We may assume after passing to a subsequence (still labelled $v_n$) that..... • Let $\Gamma$ be a directed graph with vertices labelled with names, degrees, and idempotents, and edges labelled by elements of $A \times A'$.

**lack** **1** [*see also*: absence] Note that the lack of compactness prevents us from using Theorem 1. • Thus, although we follow the general pattern of proof of Theorem A, we must also introduce new ideas to deal with the lack of product structure. • The first theorem is well known, but we give a proof for lack of a reference. • [Note the difference: absence = non-presence; lack = shortage of something desirable.]
**2** [*see also*: fail] The space $R$ is pseudo-compact but lacks any such subset. • Of the four normed trialities, the one that gives the octonions has an interesting property that the rest lack.

**language** [*see also*: term] This can be translated into the language of differential forms. • Rephrased in the language of [HT], Proposition 2 says that..... • In geometric language, the hypothesis is that $F$ is.....; part of the conclusion is that $F$ satisfies.....

**large** [*see also*: great, more, extensive, substantial] This is a condition on how large $f$ is. • The process slows down for large $x$. • Unfortunately, this only holds for $n$ sufficiently large. • Then $M_n(x) = 0$ for every $x$, however large. [= no matter how large] • Here $L$ can be taken as large as desired. • There are a large number of examples showing that..... [NOT "There is a large number" or "There is/are a big number"] • The kernel satisfies good large time bounds if..... • But $A_n z^n$ is much larger than the sum of all the other terms in the series $\sum A_k z^k$. • The question of whether $B$ is ever strictly larger than $A$ remains open. • Intuitively, entropy of a partition is a measure of its information content—the larger the entropy, the larger the information content. • the second largest element • Here $U_y$ is the inclusion-largest affine subset $U$ of $V$ containing $\{y\}$ such that..... By and large, we shall use the same notation as in..... [= In general]

**largely** [*see also*: mostly, mainly, essentially, broadly] This effect is largely [= mostly] due to the presence of the logarithmic factor. • The remainder of the estimation is largely [= to a great extent] as before with $B$ replaced by $C$. • Over the past ten years the isomorphic structure of spaces of weighted holomorphic functions has been largely [= almost completely] determined. • We will finish this section by offering a second application of our machinery (although in truth it is largely a corollary of the above).

**last** The vector $v$ has at least $n$ ones in its last $m$ positions. • This last result means that..... • This last means that..... • These last two are called the Banach maps. • (see the last paragraph but one of page 24) • The last but one step is justified by the fact that..... • the next-to-last inequality = the second last inequality = the penultimate inequality • the third last row = the antepenultimate row • the last-mentioned map • Now (d) is clear from the very last statement of Theorem 4. • He accounts for all the major achievements in topology over the last few years. • We can at last show that the limit in (1) exists. [Note that *at last* means "after much delay"; to introduce a last point or reason, use *finally* or *lastly.*]

**lastly** [*see also*: finally, last] And lastly, what do we mean by an admissible map?

**late** [*see also*: subsequently] For later use, we prove a mild refinement of this latter characterization. • Let us note (for later reference) that..... • Later, by bringing in the injectivity radius, Fong simplified the argument. • We shall see later that the values of $h(n)$ for large $n$ are irrelevant to the problem. • We now state a result that will be of use later. • To save space later on, all modules are given in the form.....

**latter** [$\neq$ later; *see also*: former] Both $F$ and $G$ are connected, but the latter is in addition compact. • Then either..... or..... In the latter case,..... • Examples 1 and 2 give two operators, the former bounded and the latter not, with..... • The bound does not depend on $n$ or $m$, nor on $k$ provided the latter is chosen large enough.

**law** Recall that the $U_i$ are independent random variables with $U(0,1)$ law. • Take $U_i$ to be independent of $V_i$ with each $U_i$ having law $\mu$.

**lay** The conference laid the basis for a series of annual gatherings. • In his Stony Brook lectures, he laid great emphasis on the use of..... • In Section 2, we lay the foundations for a systematic study of..... • Leray and Schauder laid the foundations for the generalization of the Lefschetz index to infinite dimensions. • There are some obvious necessary conditions, first laid in [8]. [= presented] • We lay out the details of this generalization in the first part of this paper.

**lead** This leads to the contradiction that $0 < a < b = 0$. • Interchanging the roles of $f$ and $g$ leads from (5) to..... • These properties led him to suggest that..... • This leads us to consider the closed subscheme defined by $G$. • The above construction has led the author to believe that..... • So one is naturally led to an investigation of..... • If we simply mimic the standard proof of....., we are led to.....

**learn** [*see also*: find out, discover] In the course of writing this paper we learned that P. Fox has simultaneously obtained results similar to ours in certain respects. • However, shortly after learning about Wiener's work, P. Lévy found a more elementary argument.

**least** [*see also*: minimal] This is the least useful of the four theorems. • The least such constant is called the norm of $G$. • The *rank of appearance* (or simply the *rank*) of an integer in the sequence $U(P)$ is the least positive integer $n$ such that..... • We select a system for which the power of $b$ dividing $n$ is least. • That is the least one can expect. • It does not matter in the least whether..... • Each $f$ lies in $zA$ for at least one $A$. • The degree of $F$ exceeds that of $G$ by at least 4.

**leave** [*see also*: keep, remain, preserve] Then we can find some net $(s_k)$ which eventually leaves every compact subset of $G$. • We leave the details to the reader. • We leave it to the reader to verify that..... • We leave the reader to check the details. • The mapping $f$ leaves the origin fixed. • These results leave open the basic case $k = \omega$. • As an application of Theorem A, in Section 2 we settle a question left unanswered in [3]. • So $s$ can be thought of as $q$ with $F^q$ extended but $X^q$ left the same. • What is left is to show that..... • We are left with the task of determining.....

**left** [*see also*: right] Examination of the left and right members of (1) shows that..... • Under those conditions, what does the sum on the left hand side of (8) signify? • Note that (2) serves as the definition of its left side. • We denote the left-hand such interval by $I^L$ and the right-hand one by $I^R$. • Now $F$ is defined to make $G$ and $H$ match up at the left end of $I$. • Combining this with the attaching map defined above, we obtain the commutative diagram..... where surjectivity of the top-left arrow follows from the fact that..... • The tangent space to $N$ at $x$ is identified with $M$ via left translation. • Upon multiplying (1.2) first on the left by $b_k$ and then on the right by $a_k$, we obtain..... • In a normed division algebra, left multiplication by an element of norm 1 defines an orthogonal transformation of the algebra. • Since....., left-multiplying by $g_n$ shows that..... • The method of proof of Theorem B can be adapted to extend the right-to-left direction of Mostowski's result by showing that..... • Comparisons are done in left-to-right order.

• The entries in each row are increasing from left to right. • The string $N$ (read from right to left) starts with..... • We say that $F$ is low if $F(c)$ lies to the left of $c$. • To be precise, $A$ is only left-continuous at 0.

**legitimate** [*see also*: justify, meaningful] Theorem 2 makes it legitimate to apply integration by parts. • The definition is legitimate, because..... • The interchange in the order of integration was legitimate, since..... • In the preceding proof, the appeal to the dominated convergence theorem may seem to be illegitimate, since.....

**lemma** [*pl.* lemmas or lemmata] We shall prove this theorem shortly, but first we need a key lemma. • The proof will be divided into a sequence of lemmas. • We now prove a lemma which is interesting in its own right. • The interest of the lemma is in the assertion that..... • We defer the proof of the "moreover" statement in Theorem 5 until after the proof of the lemma. • With Lemma 4 in ⟨at⟩ hand, we can finally define $E$ to be equal to $P(m)/H$. • ....., from which it is an easy step, via Lemma 1, to the conclusion that..... • The following lemma is the key to extending Wagner's results. • The following lemma, crucial to Theorem 2, is also implicit in [4]. • Note that this lemma does not give a simple criterion for deciding whether a given topology is indeed of the form $T_f$. • At first glance Lemma 2 seems to yield four possible outcomes. • The final lemma is due to F. Black and is included with his kind permission.

**lend** One of the appealing aspects of the spectral set $\gamma$ is that it readily lends itself to explicit computation. • This lends precision to an old assertion of Dini:.....

**length** [*see also*: detail, depth, expand] Pick the first arc of length 1 in this sequence. • The interval $J$ has length $2k$. • It can be shown that the nearest point projection $p$ reduces length by a factor of $\cos\alpha$. • This subject is treated at length in Section 2. • We shall discuss this again at somewhat greater length in Section 2.1.

**lengthy** A rather lengthy calculation shows that.....

**less** [*see also*: few] Then $F$ is 2 less than $G$. • Let $A_n$ be a sequence of positive integers none of which is 1 less than a power of two. • Thus $F$ is less than or equal to $G$. [NOT "less or equal to $G$", nor "less than or equal $G$"] • Suppose $V$ is any codimension-$m$ real algebraic variety in Euclidean $n$-space, defined by polynomials of degree $d$ or less. • Here $F$ is strictly less than $G$. • Thus $F$ is no less than $G$. • Clearly, $F$ is less than 1 in absolute value. • Less than 1 in $p$ of its points will result in a quartic with ideal class number $p$. • [Do not write "$X$ has no less elements than $Y$ has" if you mean *$X$ has no fewer elements than $Y$ has*; *less* should not be followed by a plural countable noun. However, you can use *less* when it is followed by *than* or when it appears after a noun: $X$ has no less than twenty elements; $Y$ has ten elements or less.] • Much less is known about hyperbolically convex functions. • Although our proof is a little tedious, it is much less so than Ito's original proof, which was carried out without the benefit of martingale technology. • This method is recently less and less used. • to ⟨in⟩ a lesser degree

**let** [*see also*: allow, permit] Let $R$ be a ring and $A$ a right $R$-module. [NOT "Let $R$ a ring"] • Let $f$ satisfy (2). [NOT "Let $f$ satisfies (2)", nor "Let $f$ verify (2)".] • Let $f$ be the linear form $g \mapsto (m, g)$. • We let $T$ denote the set of..... • One cannot in general let $A$ be an arbitrary substructure here. • Letting $m$ tend to zero identifies this limit as $H$. • As we let $t$ vary, $f(t)$ describes a curve in $M$. • The desired conclusion follows after one divides by $t$ and lets $t$ tend to 0. • Rescaling $M$ lets us assume that the curvature is $-1$. • Now, just the fact that $F$ is a homeomorphism lets us prove that.....

**letter** We use the letter $m$ for..... • The letter $\chi$ will be reserved for characteristic functions throughout this book.

**level** [*see also*: degree, stage] Two words are $m$-equivalent if the corresponding paths terminate at level $m$ at the same vertex and coincide from level $m+1$ to $n$. • These results show that an analysis purely at the level of functions cannot be useful for describing..... • The vector field $H$ always points towards the higher $A$-level. • The temperature has to be maintained at a very high level. • Inflation in the first quarter rose beyond the acceptable level of 5%. • The level of..... has remained largely unchanged for many years. • We do not intend to maintain this level of precision in all of our results. • Prewar levels of production were surpassed in 1929.

**liberty** This "period-8" behaviour was discovered by Cartan in 1908, but we will take the liberty of calling it *Bott periodicity*, since it has a far-ranging set of applications to topology, some of which were found by Bott.

**lie** Each component which meets $X$ lies entirely within $Y$. • Then $C$ lies on no segment both of whose endpoints lie in $K$. • The advantage of using..... lies in the fact that..... • This simple observation lies at the heart of the proof of our first theorem. • The importance of these examples lay not only in lowering the dimension of known counterexamples, but also in..... [Note that the past tense of *lie* is *lay*, not "lied".]

**light** These facts shed new light ⟨a new light⟩ on..... • From the standpoint of linear programming, the above discussion is incomplete in that it throws no light upon the question whether the function $F$ attains its infimum. • In the context of partially hyperbolic systems, some of these connections have come to light more recently. • In light of ⟨In the light of⟩ the obvious inequality $a \geq b$,..... • This is no coincidence, in the light of the remarks preceding Definition 2.

**like** [*see also*: as, resemble, similar] Thus modules over categories are in many ways like ordinary modules. • So we must in particular show that sets like this are not added. • It should come as no surprise that a condition like $a_i \neq b_i$ turns up in this theorem. • A formula like (3) surely deserves some explanation. • Specifically, one might hope that a clever application of something like Choquet's theorem would yield the desired conclusion. • Construct an example, like that of Example 9, in which (1) fails but (2) holds. • It suffices to consider $G$, for which the proof proceeds much like that of Theorem 2. • It is now apparent what the solution for $K$ will be like:..... • Let us see what such a formula might look like, by analogy with Fourier series. • The proof is nonconstructive and gives no indication of what the exceptional set may look like.

**likely** [*see also*: possible, plausible, presumably] All inputs of size $n$ are equally likely to occur. • It seems likely that the arguments would be much more involved. • It is highly likely that if one of the $X$'s is exchanged for another, the inequality fails. • We expect that this is likely to hold for all outers, but cannot prove this as yet. • A complete explication of the Fox spaces is warranted, as it will likely reveal further clues to the differences between the parabolic and hyperbolic theories. • This change is unlikely to affect the solution. • It is unlikely that the disturbances will eventually disappear.

**likewise** [*see also*: similarly, also, moreover] Likewise, if $A$ does not span $C(I)$, removal of any of its elements will diminish the span.

**limit** **1** The limit $\lim_{x\to 0} f(x)$ exists. [NOT "There exists a limit $\lim_{x\to 0} f(x)$."] • Now (1) follows after passage to the limit as $n \to \infty$.

**2** [*see also*: confine, restrict] I shall limit myself to three aspects of the subject.

**limitation** [*see also*: restriction] All these methods had severe limitations.

**line** [*see also*: approach, procedure] The proof proceeds along the same lines as the proof of Theorem 5, but the details are more complicated. • Following the same lines we find that it takes $k$ prolongations to get an immersed curve. • For direct constructions along more classical lines, see [2]. • Although these proofs run along similar lines, there are subtle adjustments necessary to fit the argument to each new situation. • Further results along these lines were obtained by Clark [4]. • This paper, for the most part, continues this line of investigation. • The same line of reasoning applies in the continuous time setting. • Here $c$ denotes a constant which can vary from line to line. • Then....., where the fact that $A = B$ was used on the penultimate line. • The first integral inside the brackets on the last line is $EX$. • The infimum in the final line here is equal to $S$. • a broken ⟨dashed, dotted, slanting, wavy⟩ line

**link** **1** [*see also*: connection, relationship] There is a close ⟨direct/strong⟩ link between..... • The link between differential equations and homotopy groups first came about as a result of the realization that ellipticity of a differential operator can be defined in terms of its symbol. • We also make links with some classical notions, in particular, Taylor's structure semigroup. • It is worth making a link with Theorem 1.

**2** [with/to sth; *see also*: connect, join, relate, tie, associate] The spectral theory of..... is closely linked to the discrete Hilbert transform.

**list** **1** Let $f$ be the $i$th formula on the list. • The algorithm compares $x$ with each entry in turn until a match is found or the list is exhausted.

**2** [*see also*: enumerate] In the final section of the paper, we list some open problems. • All possible types are listed in Table 4. • We then provide constructions to show that each of the cases listed can actually occur. • Conversely, all the listed cases give rise to reducible modules.

**literal** Of course, a literal interpretation of (1) makes no sense.

**literature** There is now an extensive literature dealing with..... • For a comprehensive treatment and for references to the extensive literature on the subject one may refer to the book [M] by Markov. • However, no extension in this direction has appeared in the literature. • Incidentally, the question of whether $K(E)$ is amenable for specific Banach spaces $E$ seems to have received almost no attention in the literature. • Unfortunately, the connection with Gromov's work has been obscured in recent years by an emphasis (in the algebraic topology literature) on configuration spaces.

**little** [*see also*: minor, slight, somewhat, hardly] The polynomials $R_i$ do not have this stability property, and are therefore of little interest. • However, this approach seems to be of little help in the mathematical theory of the problem. • A little reflection on the definitions makes it clear that..... • This property is of course already well known in many cases, often with little or no restrictions on $V$. • This interpretation does little, in sum, to add to our understanding of..... • Apart from a few embellishments necessitated by some technical difficulties, the ideas differ very little from those used to prove Lemma 4. • This idea is very little different from what can already be found in [2]. • Little else is known about the Klein property in this class of spaces, • Although our proof is a little tedious, it is much less so than Ito's original proof, which was carried out without the benefit of martingale technology. • With a little more work we can prove..... • [Note that in the above example, 'a little' is an adverb and qualifies the word 'more', and not 'work'. Do not use 'a little' if another 'a/an' would have to be placed in front of it: instead of "He has obtained a little better result" write *He has obtained a somewhat better result.*]

**locate** Let us digress to locate the need for relative ergodicity in the above arguments. • These slits are located on circles about the origin of radii $r_k$.

**location** [*see also*: place, position] Theorem 7 imposes a quantitative restriction on the location of the zeros of..... • The location of the zeros of a holomorphic function in a region $\Omega$ is subject to no restriction except the obvious one concerning the absence of limit points in $\Omega$. • Let $n_k$ be the first location to the right of the $k$th decimal place of $W$ that has a value less than $b$.

**long** Hence $F$ is twice as long as $G$. • However, with the recent advent of simulation based inference, the need for analytically tractable posteriors is no longer critical. • It turns out that this is independent of the representations taken (as long as they are faithful). [= provided that they are faithful] • It has long been known that..... • The following simple example has long been a part of ergodic-theoretic folklore. • This bound, due to Dudley [D85], long predates Theorem 7 and has found widespread use. • a long-standing conjecture

**look** **1** [*see also*: glance, inspection, scrutiny] Let us now take a quick look at the class $N$, with the purpose of determining how much of Theorems 1 and 2 is true here. • This inspired us to take a fresh look at all the results in [BG]. • We first need to have a look at the behaviour of an elementary operator with respect to primitive quotients. • A careful look at the proofs reveals that.....

**2** [*see also*: view, regard, examine, study, appear] The preceding observation, when looked at from a more general point of view, leads to..... • Rather than discuss this in full generality, let us look at a particular situation of this kind. • Suppose, to look at a more specific situation, that..... • This has the effect of making our theorems look less elegant than their counterparts in [KJ], but this seems to be the price to pay for complete generality. • Let us see what such a formula might look like, by analogy with Fourier series. • The proof is nonconstructive and gives no indication of what the exceptional set may look like. • We have proved that the dividing curves on $P$ can be made to look like those in Figure 8. • This observation prompted the author to look for a more constructive solution. • Here, of course, the set $A$ produced is rather thin and certainly nowhere near the densities we are looking for.

**lose** This extension retains control on..... at the sacrifice of losing some control on..... [NOT "loosing"] • The total amount of information lost is.....

**loss** [*see also*: harm] It simplifies the argument, and causes no loss of generality, to assume..... • This involves no loss of generality. • Without loss of generality we can assume that..... • [In many cases, the phrase "without loss of generality" can be omitted; write simply: *We can assume that.....* Avoid using the abbreviation "w.l.o.g."]

**lot** [*see also*: heavily] This is an area where there is currently a lot of activity.

**low** [*see also*: lower] The weight dropped to a low of 7 kg.

**lower** **1** [*see also*: decrease, diminish, reduce, cut down, limit] The importance of these examples lay not only in lowering the dimension of known counterexamples, but also in..... [Note that the past tense of *lie* is *lay*, not "lied".]

**2** The lower limit is defined analogously: simply interchange sup and inf in (1). • The reader may wonder why we have apparently ignored the possibility of obtaining a better lower bound by considering..... • a path obtained by going from $A$ to $B$ along the lower half of the circle • a lower semicontinuous function

# M

**machinery** We will finish this section by offering a second application of our machinery (although in truth it is largely a corollary of the above). • The main approach that has been developed for the latter purpose is Talagrand's growth functional machinery [T] that forms the core of the proof of Theorem 4.

**magnitude** [*see also*: size] In all our analysis, only the order of magnitude of $P$ will be significant.

**main** [*see also*: critical, crucial, essential, key, major] The main problems that we address are..... • Our main results state in short that MEP characterizes type 2 spaces among reflexive Banach spaces. • In brief outline, here is the main idea of the proof. • The main new feature is the use of the face ring to produce lower bounds for the number of vertices.

**mainly** [*see also*: mostly, largely, primarily, part] The proof is mainly included to keep the exposition as self-contained as possible. • Although [1] deals mainly with the unit disc, most proofs are so constructed that they apply to more general situations. • We conclude with two simple lemmas to be used mainly in.....

**maintain** [*see also*: keep, retain, preserve] We maintain the convention that implied constants depend only on $n$. • The temperature has to be maintained at a very high level. • Now it is a simple matter to change the definition of the $F_i$ at the single point zero, still maintaining condition (C), so that $F$ is no longer discontinuous. • We do not intend to maintain this level of precision in all of our results.

**major** [*see also*: important, principal, main, significant] One major advantage of..... is that..... • This was one of the major steps in Wiener's original proof of his Tauberian theorem. • The major portion of one direction of the proof is contained in the previous proof.

**majority** [*see also*: most] There is, however, a simple condition, satisfied in the vast majority of applications, which ensures..... • In the majority of applications, $K$ is an embedding. Our application is no different: the next result is obtained by letting $K$ be the embedding of.....

**make** [*see also*: do, build, construct, perform, carry out, produce, convert, transform, turn into, force, compose, comprise, consist, constitute] The tensor product makes $G$ a module over $R$. • In [2], this theorem is made the starting point of Gelfand theory. • This norm makes $X$ into a Banach space. • Theorem 2 makes it legitimate to apply integration by parts. • Now (8) makes it obvious that..... • This device makes it possible to replace multivalued functions by functions with..... • .....where $C$ can be made arbitrarily small by taking..... • If this is not so, a linear fractional transformation will make it so. • We make $G$ act trivially on $Y$. • Now $F$ is defined to make $G$ and $H$ match up at the left end of $I$. • But..... it being impossible to make $A$ and $B$ intersect. [= since it is impossible to make.....] • The definition of generator is designed to make the proof above work for $M = Z$. • The function of Lemma 2 can be made to satisfy..... • A similar reformulation can be made for..... • It is sufficient to make the computation for $T$. • After making a linear transformation, (9) becomes..... • Let us make the following observation ⟨assumption/definition⟩. • Before we do this, we make an observation concerning $X$. • We make the convention that $f(Q) = i(Q)$. • Recently proofs have been constructed which make no appeal to integration. • It is worth making a link with Theorem 1. • We now proceed to make the connection between segment factors and quadratic approximation. • Nevertheless, it might be possible to make sense of (2) even for non-injective $V$ by considering a multi-valued operator $Z$. • Indeed, it is routine to verify that the index so constructed is independent of the choices made. • The set $WF(u)$ is made up of bicharacteristic strips. • Each of the terms that make up $G(t)$ is well defined. • Women make up two-fifths of the labour force.

**manage** Suppose we have managed to find $A_i$ for all $i < n$.

**manifestly** [= evidently] This series is manifestly convergent.

**manipulate** [*see also*: manage, control, handle ] While nonparametric priors are typically difficult to manipulate, we believe the contrary is true for quantile pyramids.

**manner** [*see also*: fashion, way, method] Theorem 2, at the end of Section 2, was not originally obtained in the manner indicated there. • If our measure happens to be complete, we can define $f$ on $E$ in a perfectly arbitrary manner. • It is an easy matter to use Theorem 10 to construct all manner of interesting Peano continua [= continua of different kinds]

**many** [*see also*: abound, number, numerous, profusion, several] Many of them were already known to Gauss. • The proof makes use of many of the ideas of the general case, but in a simpler setting. • Thus $G$ has 10 normal subgroups and as many non-normal ones. • Consequently, $H$ is a free $R$-module on as many generators as there are path components of $X$. • Therefore, $A$ has two elements too many. [OR $A$ has two too many elements.] • Then $A$ has three times as many elements as $B$ has. • It meets only countably many of the $Y_i$. • a sequence with only finitely many terms nonzero • To compute how many such solutions there are, observe..... • How many of them are convex? • How many such expressions are there? • How many entries are there in this section? • How many multiplications are done on average? • How many zeros can $f$ have in the disc $D$?

**map** [*see also*: mapping, transformation, function] **1** an onto map • a one-to-one map • The continuum $Y$ is tree-like since it admits a map onto $X$. • It is clear that (up to set-theoretic niceties) this defines a partial order on the class of $R$-equivalence classes of Borel maps out of the given space $X$. • Thus $\pi_n(X)$ can be interpreted as the homotopy classes of maps $S^n \to X$. • There is a self-evident notion of a map between filtered spaces. • This map carries lines to lines ⟨carries $M$ onto $N$⟩. • Any map either has a fixed point, or sends some point to its antipode. • The map $f$ takes $a$ to $f(a)$. • The map $f$ takes the value 1 for $t = 1$. • The map $U(t)$ takes values in some compact space $G$. • The map $f$ assigns to each $x$ the unique solution of..... • This map extends to all of $M$. • The map $f$ factors through the space $X$. • Note that $C$ behaves covariantly with respect to maps of both $X$ and $G$. • The only thing to check is that maps compose correctly; but this is an easy, if tedious, verification. • This map will be shown to be in $M$ by examining its effect on $B$.

**2** [*see also*: send] $F$ maps $\{a, b\}$ to $\{c, d\}$. • If $f$ maps $D$ into itself, then $T$ is commonly called a composition operator. • It follows that $F$ maps $L$ homeomorphically onto itself. • The point $x$ maps to $\infty$ under $f$. • When operated on by a rotation, each of these vectors is mapped to..... • For this purpose, it is necessary to understand the mapping properties of $B$ on as large a function space as possible.

**mapping** [*see also*: map, transformation, function] We regard (1) as a mapping of $S^2$ into $S^2$, with the obvious conventions concerning the point $\infty$. • It is important to pay attention to the ranges of the mappings involved when trying to define..... • The mapping $f$ leaves ⟨keeps⟩ the origin fixed. • Bruck's theorem on common fixed points for commuting nonexpansive mappings is then brought into play by noting that.....

**mark** **1** [*see also*: sign] The mark over an element denotes that it has been omitted.
**2** [*see also*: indicate, label] The arrow marks the direction of the resulting flow. • The greatest element is marked with a dot. • In Figure 2, the set $A$ is marked by a square with a small triangle on top. • Number the successive segments of the boundary line between $A$ and $B$ (marked thickly in the picture) with the numbers $0, 1, ..., n$, starting at the bottom. • a marked difference [= obvious, noticeable]

**match** **1** The algorithm compares $x$ with each entry in turn until a match is found or the list is exhausted.
**2** [*see also*: accord, agree, correspond] Suppose the first three characters of the pattern match three consecutive text characters. • Notice that the conditions of each lemma are numbered to match the corresponding conditions of Theorem 1. • This conclusion matches the elliptic curve rank behaviour conjectured by Goldfeld [G]. • Now $F$ is defined to make $G$ and $H$ match up at the left end of $I$.

**material** [*see also*: information, data, fact, detail] Basic material on semigroups of operators can be found in [4]. • For relevant background material concerning random walks, see [2]. • Section 2 contains some specific preparatory material, notably a brief discussion of the category of virtual vector bundles.

**matrix** Define $A$ to be the matrix with 1 in the $(i, j)$ entry and 0 elsewhere. • Take $A$ to be the matrix with all entries zero except for $i - j$ at $(i, j)$. • a real $n \times n$ matrix

**matter** **1** [*see also*: issue, subject, topic, thing, problem] This proves one half of (2); the other half is a matter of direct computation. • The first of the above equalities is a matter of definition, and the second follows from (3). • It is a simple matter ⟨a routine matter/a matter of routine⟩ to show that..... • It is an easy matter to use Theorem 10 to construct all manner of interesting Peano continua [= continua of different kinds] • The crux of the matter is to control the sets $B_t$. • We conclude that, no matter what the class of $b$ is, we have an upper bound on $M$. • Nevertheless, no matter how small a neighbourhood of $x$ we take, the image will be..... • However, for three more subgroups, matters become more complicated. • The same trick reduces matters to studying the functions $f_i$.
**2** [*see also*: important, relevant] It does not matter in the least whether..... • Whether or not this is correct does not matter; we are trying to motivate the proof that follows.

**maximal** [*see also*: maximum] Suppose $A$ is maximal with respect to having connected preimage. • Take $N$ to be a family of normal measures in $P(X)$ such that $N$ is maximal subject to the condition that the supports of the measures in the family are pairwise disjoint. • Now suppose that $F(n) = x$ and that $n$ is maximal in this respect.

**maximum** [*see also*: maximal, supremum] The function $g$ attains ⟨takes/achieves⟩ its maximum at $x = 5$. • For example, $F$ reaches a relative maximum of 5.2 at about $x = 2.1$. • Now (c) asserts only that the overall maximum of $f$ on $U$ is attained at some point of the boundary. • By computing the second derivative we note that $x = 1$ is a maximum point for $f$. • This has a maximum value of 4 when $x = 2$. • Then $V(x)$ is the maximum value of $J_x(v)$ over all controls $v$. • Let $q$ be the maximum number of variables occurring in..... [Note the double $r$ in *occurring*.] • vectors in $V$ at maximum distance from $v$ • the maximum possible density

**may** [*see also*: can, could, might] Then $F$ may or may not fix $B$. • Here $S$ may be $P$, but it may also not be $P$. • In other algorithms, this may not be true. • In [2] Marx et al. make the surprising observation that the convolution may not even be once differentiable if we replace 'continuously differentiable' by 'differentiable'. • In addition to a contribution to $W_1$, there may also be one to $W_2$. • Note that both sides of the inequality may well be infinite. • It may well be that no optimal time exists, as the following example shows. • It may seem strange to define $0.\infty = 0$. • We may (and do) assume that..... • Since the integrands vanish at 0, we may as well assume that..... • We may consider the Banach space $Z$ to be a subspace of $M$ in the following way. • However, $F$ is only nonnegative rather than strictly positive, as one may have expected. • Since $Z$ is a finite set, we may continue subtracting suitable scalar multiples of the $x_i$ from $x$. [OR we can continue]

**mean** **1** Indeed, $N$ is a Gaussian random variable with mean 0 and variance $g$.
**2** [*see also*: signify, indicate, convey, suggest] We partially order $M$ by declaring $X < Y$ to mean that..... • Here (1) can be interpreted to mean that..... • Here 'essentially' means 'up to a zero set'. • The first equality is understood to mean that..... • In Chapter 5, we shall explain what it means for a subset $V$ of $A$ to be determining for the centre of $X$. • Note that (A) means precisely that condition (B) is not satisfied. • Important analytic differences appear when one writes down precisely what is meant by..... • Then (6) merely means that..... • The difficulty is that it is by no means clear what one should mean by a normal family. • We will argue that $K$ must have maximum rank. Suppose not, meaning that $b(K) < n$.

**meaning** [*see also*: sense] We shall also refer to a point as backward nonsingular, with the obvious analogous meaning. • As $M$ is ordered, we have no difficulty in assigning a meaning to $(a, b)$.

**meaningful** [*see also*: justify, legitimate, meaningless] This shows that the sequence (1) is bounded below, and so the definition of $L(f)$ is meaningful.

**meaningless** [*see also*: meaningful] But if we argue as in (5), we run into the integral....., which is meaningless as it stands.

**means** [*see also*: application, device, use, via] This provides an effective means for computing the index. • By relatively straightforward means one can show that..... • Then $F$ and $G$ are homotopic by means of a homotopy $H$ such that..... • It is easy to see, by means of an example, that..... • Find integral formulas by means of which the coefficients $c_n$ can be computed from $f$. • We quantify this property by means of a number $\gamma$, called the segment factor. • The difficulty is that it is by no means clear what one should mean by a normal family.

**measure** **1** Here $dx$ stands for Lebesgue measure. [OR the Lebesgue measure] • Each set $A$ carries a product measure.
**2** [*see also*: quantify] The aim of this article is to study the relationship between the size of $A$, as measured by its diameter, and the extent to which $A$ fails to be convex. • The associator measures the failure of associativity, just as the commutator measures the failure of commutativity.

**meet** [*see also*: intersect, encounter, come across, run into, satisfy] The sets $A$ and $B$ meet in two points. [= Their intersection is a two-point set] • We may assume that this is the first point at which these two curves have met. • Each component which meets $X$ lies entirely within $Y$. • The remaining requirements for a type $F$ map are also met. • We can also appeal to Lemma 5 to see that the uniform continuity condition (5.3) is met.

**member** [*see also*: element, side] Moreover, $\{x\}$ is the set whose only member is $x$. • Define $F : \omega \to \omega$ by setting $F(m)$ to be the largest member of the finite set $X_m$. • Examination of the left and right members of (1) shows that.....

**membership** [in/of sth] Computing $f(y)$ can be done by enumerating $A(y)$ and testing each element for membership in $C$. • Thus $W$ satisfies two of the four requirements for membership in $Z$.

**mention** **1** We conclude with a brief mention of free inverse semigroups. • Throughout what follows, we shall freely use without explicit mention the elementary fact that..... • We will work exclusively in the category of standard Borel probability spaces, and so will often suppress mention of their sigma-algebras. • The method sketched in Section 3 of [Con] carries through with our choice of $\psi = \psi_1 + \psi_2$, but there is one extra ingredient worthy of mention.
**2** [sth; doing sth; *see also*: allude, refer] In [5] he mentions having proved that for $g \geq 1$. • One more case merits mentioning here. • It seems appropriate to mention in passing the corresponding formula for the cohomology of $B_n$. • There has since been a series of improvements, of which we briefly mention the work of Levinson. • Then $J$ is the closure of $M$ in the topology just mentioned. • the above-mentioned element • the last-mentioned map • the problem mentioned [NOT "the mentioned problem"]

**mere** [*see also*: just, only] The quantity $A$ was greater by a mere 20%. • However, this equality turned out to be a mere coincidence. • This result shows that the mere existence of a nontrivial automorphism $j$ of $M$ produces the cut $I(j)$ of $M$ that satisfies (2).

**merely** [*see also*: just, only] It turns out that $A$ is not merely symmetric, but actually selfadjoint. • But (3) is merely an abbreviation for the statement that..... • Here (6) merely means that..... • How is the result affected if we assume merely that $f$ is bounded?

**merit** **1** [*see also*: advantage, benefit] Each approach has its own merits. • The merit of Theorem 5 is that it identifies.....
**2** [*see also*: worth, warrant] One more case merits mentioning here. • The results have been encouraging enough to merit further investigation.

**method** [of sth; of/for doing sth; *see also*: approach, device, means, procedure, strategy] His method of proof was to first exhibit a map..... • The method of proof carries over to domains satisfying..... • We require a method of dividing $z$ into subwords $z_i$ for which we know the structure of $f(z_i)$. • This provides a method for recognizing pure injective modules. • To see this connection, we need to explain briefly the method by which universal minimal flows are calculated in [KPT]. • Here the functional-analytic tools required are simpler, but this easier setting allows us to develop some methods without undue worry about technicalities. • Our method has the disadvantage of not being intrinsic. • All these methods had severe limitations. • A shortcoming of our method is the inability to compare three or more progressions. • To show the greater simplicity of our method over Brown's, let us..... • In [1] the methods used are those of differential topology.

**methodology** The fact that such a bias has been observed experimentally is further evidence that the methodology of basing conclusions on the distribution of $P$ is reasonable.

**middle** We divide them into three classes depending on the width of the middle term as compared with the width of the other terms. • Let $E$ be Cantor's familiar middle thirds set.

**might** [*see also*: may, could] One might hope that this method would work at least for sufficiently regular maps; however,..... • It will eventually appear that the results are much more satisfactory than one might expect. • Let us see what such a formula might look like, by analogy with..... •. One must also be aware that the curvature of $M_i$ might not be bounded uniformly in $i$.

**mild** [*see also*: moderate, reasonable] For later use, we prove a mild refinement of this latter characterization. • under mild restrictions on $f$

**mimic** If we simply mimic the standard proof of..... we are led to.....

**mind** [*see also*: remember] With Lemma 2 in mind, we make the following ad hoc definition. • An example to bear in mind is behaviour in the basin of a periodic point. • Two necessary conditions come to mind immediately. • When reading the proof of Lemma 2, it is helpful to keep in mind that..... • It is helpful to keep these similarities in mind.

**minimal** [*see also*: least, maximal] In the next theorem, we give fairly minimal conditions that imply..... • Suppose that of all such solutions, $(x, y, z)$ is one with $y$ minimal. • Define $n$ to be minimal such that $f^n(x) = y$. • For any $A$, there is an inclusion-minimal face $B$ of $A$ containing $C$. • The inhomogeneous case follows with minimal change to the argument.

**minimize** Among all bases $\{a_1, \dots, a_n\}$ for $W$, any one that minimizes the product $|a_1| \dots |a_n|$ is called a *reduced basis.* •

**minimum** [*see also*: maximum] Under what conditions can $f$ have a local minimum in the interval $A$ ⟨at the point $x_0$⟩? • This is the minimum property of the Jordan decomposition which was mentioned in Section 6. • Choose such a pair of cycles $C$, $C'$ with $l$ a minimum.

**minor** [*see also*: slight, fine] We take this opportunity to correct a minor error in Lemma 2 of [PS]. • with minor modifications

**minus** [*see also*: plus, remove, delete, negative] It follows that the last sum is equal to minus itself, and is therefore zero. • the minus sign • a conformal mapping of $Q$ onto the complex plane minus the nonnegative real axis

**miscellaneous** [*see also*: various] In this section we gather some miscellaneous results that are more or less standard. These will be used to calculate the constants $c_\star(\alpha, \beta)$, and we place them here to avoid interrupting the forthcoming arguments.

**miss** [*see also*: avoid, overlook] Half of the sets of $R$ miss $i$ and half the remaining miss $j$. • The image of $U$ under $f$ misses out more than three points of the sphere.

**mistake** [*see also*: error] Note that there is a mistake on p. 3 of [5], where the condition..... should be deleted. • a serious ⟨common/crucial/fundamental/typical/slight/unfortunate⟩ mistake

**mnemonic** The term ‘upath’ is a mnemonic for ‘unit speed path’.

**model** **1** A model for analysing rank data obtained from several observers is proposed. • Here we consider a dual variational formulation which can be derived similarly to that for the sandpile model. • One reason for using this rather elaborate model is that it permits a simple and concrete definition of the realization. • We motivate our work in Lipschitz domains by first considering a model case, that of harmonic functions defined on the upper half-space.
**2** We model the intensity process for subject $i$ as $f_i =$..... • The starting point is that $L(E, s)$ should be modelled by the characteristic polynomial of a random matrix from $SO_N$. • The

following argument is modelled after the one in [AB]. • To obtain finer information, we let $X$ depend on the height $H$ of the elliptic curve being modelled.

**moderate** [*see also*: mild, reasonable] a function of moderate growth

**modification** [*see also*: adaptation, adjustment, change, variant, variation] The proof is similar to the proof of Theorem 4, with two principal modifications. • We write $\beta =$ ....., which is a slight modification to the previous version of $\beta$. • The only modification to be made is that we define..... • This results from a straightforward modification of Adams's [1] result (see [5] for an exposition of Adams's construction and details of the said modification). • with minor modifications • (with the usual modification for $p = \infty$) • a considerable ⟨extensive/major/significant⟩ modification

**modify** [*see also*: alter, change, adjust, vary, revise] The function of Lemma 2 can be easily modified to obey the extra condition. • If $h$ is modified by the addition of a suitable constant, it follows that..... • We finish by mentioning that, suitably modified, the results of Section 2 apply to the $AP$ case. • To obtain the required map one must modify the method as explained in [9].

**modulus** [*pl.* moduli] an element of modulus 1 • Then $F$ is bounded in modulus by 1. • Hence $F$ is the largest (in modulus) limit point of the sequence $F_n$.

**moment** [*see also*: time, temporary, temporarily, shortly, momentarily] A moment's consideration will show that..... • Suppose for the moment that $q = 1$, so that $\beta = 1$. • We shall show in a moment that these solutions are unique. • The limit exists since $C$ has a finite first moment.

**momentarily** [*see also*: moment, shortly] ....., where $k$ and $p$ are to be defined momentarily.

**monotone** [= monotonic; *not*: "monotonous"] the monotone convergence theorem • [Note that the term *decreasing function* is preferable to "monotone decreasing function".]

**more** [*see also*: additional, extra, further, great] We conclude this section with one more result. • One more case merits mentioning here. • Applying this argument $k$ more times, we obtain..... • Note that these numbers are 2 more than the dimensions of $R$, $C$, $H$ and $O$. • Then $F$ has $n$ or more zeros in $\Omega$. • In dimensions three or more, this would imply..... • Beware that more than one equation is referred to as the fast diffusion equation in the literature. • If $c$ is only slightly larger than 1, say $1 < c < 3$, then there is more than one curve with this property. • If more than one of the $x_i$ are zero, then..... • The $L^2$ theory has more symmetry than is the case in $L^1$. • a set of no more than $k$ elements • Those more than half a square count as whole ones. • ....., which, by another theorem of Kimney's, is more than enough to guarantee that $P$ gives $A$ outer measure 1. • A more complete theory may be obtained by allowing..... • a succession of more and more refined discrete models • This accords with the intuition that as we pass down the coding tree, we find out more and more detailed information about the ordering actually represented. • How many more men attended the meeting than the women? • The new $X$ is no more continuous, although it still has norm 1. • [Do not write "much more elements" if you mean *many more elements*.]

**moreover** [*see also*: also, furthermore, likewise] Moreover, $H$ is a free $R$-module on as many generators as there are path components of $X$. • Since $A = B$ and $B = C$, and since moreover $C = D$, it follows that $A = C$. • We defer the proof of the 'moreover' statement in Theorem 5 until after the proof of the lemma.

**-morphic** As noted before, there exists $N$ homeomorphic to $P$ such that..... • This space is naturally isomorphic to $B$. • Over the past ten years the isomorphic structure of spaces of weighted holomorphic functions has been largely [= almost completely] determined.

**-morphically** It follows that $F$ maps $L$ homeomorphically onto itself.

**-morphism** The function thus defined is a semigroup morphism. • We turn the set of..... into a category by defining the morphisms to be..... • By a partial automorphism of $A$ we understand an isomorphism $f : B \to C$ between two subalgebras $B$ and $C$ of $A$. • The induced homomorphism is multiplication by 2. • If we know a covering space $E$ of $X$ then not only do we know that..... but we can also recover $X$ (up to homeomorphism) as $E/G$. • Associated with each Steiner system is its automorphism group, that is, the set of all..... • The last statement of Lemma 2 yields the algebra isomorphism $A = B$. • an orientation preserving homeomorphism • a complete set of representatives of the isomorphism classes of $A$-modules

**most** [*see also*: largely, extent, majority] There are at most two such $r$ in $(0, 1)$. • The number of distinct values that could be in a memory cell is at most $s$. • Thus $A$ is the union of $B$ plus an at most countable set. • The two functions differ at most on a set of measure zero. • The addition of a single hyperedge to $G$ changes $N(G)$ by at most $k$. • If $A$ consists of at most one point, then..... • The set $F$ has the most points when..... • In most cases it turns out that..... • Most measures that one meets are already complete. • The proof shows that if the points are drawn at random from the uniform distribution, most choices satisfy the required bound. • Although [1] deals mainly with the unit disc, most proofs are so constructed that they apply to more general situations. • Most of the theorems presented here have never been published before. • Most of this book is devoted to..... • In the case where $A$ is commutative, as it will be in most of this paper, we have..... • For most of the proof it suffices to use the rough bound $p < 1$. • [Use *most of* before *the*, *this*, *our* etc.] • A survey of the research on $f_n(x, y)$ up to 1970 (most of it dealing with the case $n = 1$) was given in [3]. • The proofs are, for the most part, only sketched. • This paper, for the most part, continues this line of investigation. • We shall be brief here and just estimate the terms that are the most challenging. • Most probably, his method will prove useful in..... • We can do this mosteasily when $a$ has norm 1. • What most interests us is whether.....

**-most** the rightmost expression [= the last one on the right] • the innermost integral

**mostly** [*see also*: mainly, largely, primarily, part] Instead, we shall mostly work with the larger class of..... • Below, we shall be mostly interested in Poisson cohomology of the algebra $V$.

**motivate** [*see also*: inspire, prompt] This motivated Galvin to ask the following question. • Motivated by (4), we obtain the following characterization of..... • The lemma motivates our calling $R$ a generalized Picard group. • It seems that the relations between these concepts emerge most clearly when the setting is quite abstract, and this (rather than a desire for mere generality) motivates our approach to the subject. • Whether or not this is correct does not matter; we are trying to motivate the proof that follows. • We motivate our work in Lipschitz domains by first considering a model case, that of harmonic functions defined on the upper half-space. • The following theorem is clearly motivated by the classical LP-decomposition. • The present paper is motivated by the desire to make the subject as accessible as possible.

**motivation** [*see also*: impulse, inspiration] Further motivation for looking at ideal class groups comes from the field of cryptography. • The motivation for writing this paper was twofold. • The motivation for the results of this section is the following result of John (paraphrased slightly to suit our purposes). • This is the motivation behind the following process.

**move** [*see also*: go, proceed, carry, transfer] The problem is to move all the discs to the third peg by moving only one at a time. • The point $A$ can be reached from $B$ by moving along an edge of $G$. • Any point not in $B$ is moved by $f$ a distance equal to twice the distance to $M$. • Part of the conclusion is that $F$ moves each $z$ closer to the origin than it was. • In the present paper we move outside the random walk case and treat time-inhomogeneous convolutions. • As the point $z$ moves around the unit circle, the corresponding $J_z$'s are rotations of angle $t(z)$. • Schenzel's formula frequently allows us to move back and forth between the commutative algebras of $k[P]$ and the combinatorics of $P$. • We now move on to the question of local normal forms.

**much** [*see also*: extent, far, abundance, wealth, majority] Thus $F$ is very much larger than $G$. • Although the definition may seem artificial, it is actually very much in the spirit of Darbo's old argument in [5]. • This interval is much smaller than that suggested by (8). • Much less is known about hyperbolically convex functions. • The map $G$ can be handled in much the same way. • We can multiply two elements of $E$ by concatenating paths, much as in the definition of the fundamental group. • The strategy is much the same as for the proof of Theorem 2. • It suffices to consider $G$, for which the proof proceeds much like that of Theorem 2. • Much of the rest of the paper is devoted to..... • We shall make much use of the following result of Nickel. • How much of the foregoing can be extended to the noncompact case? • Another topic of great interest is how much of adjunction theory holds for ample vector bundles. • Let us now take a quick look at the class $N$, with the purpose of determining how much of Theorems 1 and 2 is true here. • [Do not write "much too many elements" if you mean *far too many elements.*]

**multiple** Thus $F$ is at most a multiple of $G$ plus..... • The last term is bounded by a constant multiple of the norm of $g$.

**multiplication** The induced homomorphism is multiplication by 2. • Finally, multiplication by a permutation matrix will get the exponents in descending order. • The Fourier transform converts multiplication by a character into translation, and vice versa, it converts convolutions to pointwise products. • In a normed division algebra, left multiplication by an element of norm 1 defines an orthogonal transformation of the algebra. • Suppose that $F$ and $G$ commute up to homotopy when acting by multiplication on the left.

**multiply** Multiplying through by $f$ and integrating shows that..... • Then $A = B$, as one sees by multiplying out the product on the right. • The theory of elementary divisors now shows that by pre- and post-multiplying $x$ by suitable elements of $K$ we can reduce $x$ to a diagonal matrix. • Upon multiplying (1.2) first on the left by $b_k$ and then on the right by $a_k$, we obtain..... • Since....., left-multiplying by $g_n$ shows that.....

**must** [*see also*: have to, necessarily, force, need, should] Any algorithm to find max must do at least $n$ comparisons. • We must have $Lf = 0$, for otherwise we can replace $f$ by $f - Lf$. • Our present assumption implies that the last inequality in (8) must actually be an equality. • If there are to be any nontrivial solutions $x$ then any odd prime must satisfy..... • In outline, the argument follows that of the single-valued setting, but there are several significant issues that must be addressed in the $n$-valued case. • Nevertheless, in interpreting this conclusion, caution must be exercised because the number of potential exceptions is huge. • Theorem 3 may be interpreted as saying that $A = B$, but it must then be remembered that..... • [Use *must/must not* only when there is no freedom of choice; otherwise try *need/need not* or *should/should not* instead.]

**mutatis mutandis** [= with necessary changes] We shall suppose that Assumptions 2.1 hold *mutatis mutandis.* • The remainder of the proof of [3, Lemma 7.2] carries through in the present context, *mutatis mutandis.*

## N

**name** [*see also*: call, designate, term] **1** The name 'Riesz theorem' is sometimes given to the theorem which asserts that..... • The name of Harald Bohr is attached to $bG$ in recognition of his work on almost periodic functions. • This class of Hurewicz spaces has appeared under different names in the study of small sets of reals.
**2** This has numerous important consequences; to name just two, Brauer proved that..... • Here $D$ is induced by the same named differential on the algebra $V$. • Let $A$ and $B$ be its two parts, named in random order. • This theorem was proved by Kohn some 40 years before it was rediscovered by Birkhoff, after whom it was named.

**namely** Here $D_0$ and $D_1$ are discs with the same centre, namely $b$. • The object of this paper is to obtain improvements in two cases, namely for forms of degree 7 and 11. • It has some basic properties in common with another most important class of functions, namely, the continuous ones. • There is another, entirely different, way to see that $A = B$. Namely, one can first show that..... • [Note the difference between *namely* and *that is*: while *namely* introduces specific or extra information, *that is* (or *i.e.*) introduces another way of putting what has already been said.]

**narrowly** The answer depends on how broadly or narrowly the term 'matrix method' is defined.

**natural** It is therefore natural to allow (5) to fail when $x$ is not a continuity point of $F$. • It is natural to make the following definition. • In this case it is natural (and notationally convenient) to pick $W$ to be..... • A natural question to ask is how the quantities $A(S,T)$ and $B(S,T)$ vary as $S$ and $T$ change.

**naturally** This space is naturally isomorphic to $B$. • The question naturally arises whether this representation is unique. • Where we could, we have chosen these examples from naturally occurring mathematical structures. [Note the double $r$ in *occurring.*]

**nature** [*see also*: essence, substance, point] The two examples, $E_1$ and $E_2$, differ by only a single sequence, $e$, and they serve to illustrate the delicate nature of Theorem 2. • This bound involves only the entropy numbers of the set $B$ itself, and appears at first sight to be quite different in nature than Theorem 5.

**near** [*see also*: close] Thus $F$ is near 1. [OR near to 1] • for $p$ near enough to $q$ • Denote by $q$ the point of $A$ nearest to $p$. • Here, of course, the set $A$ produced is rather thin and certainly nowhere near the densities we are looking for.

**nearby** We can write nearby points $y$ as $y = x + r$.

**nearly** [*see also*: almost, practically] This is nearly the same as formula (6) of [7], which we can recover by multiplying (2.3) by $F(s)$. • Theorem 5 can only give sharp results if one is able to construct a nearly optimal sequence of nets.

**neat** [*see also*: nice, precise] The surprisingly neat answer is that the functions (2) span $C(I)$ if and only if $G(a) = 0$.

**necessarily** [*see also*: need, entail] For general rings, $\mathrm{Out}(R)$ is not necessarily well-behaved. • Clearly, $F$ is bounded but it is not necessarily so after division by $G$. • .....where $P(d)$ denotes the space of (not necessarily monic) polynomial functions of degree $d$. • Necessarily, one of $X$ and $Y$ is in $Z$. • His proof is unnecessarily complicated.

**necessary** [*see also*: condition, need] We can assume, by decreasing $n$ if necessary, that..... • Passing to a subsequence if necessary, we can assume that..... • We can assume that $p$ is as close to $q$ as is necessary for the following proof to work. • This is necessary for determining the constants in Theorem 2. • Although these proofs run along similar lines, there are subtle adjustments necessary to fit the argument to each new situation. • It is therefore unnecessary to specify $G$ on $M$.

**necessitate** [*see also*: entail, involve, force, require] Apart from a few embellishments necessitated by some technical difficulties, the ideas differ very little from those used to prove Lemma 4.

**necessity** [*see also*: need] We now prove necessity. [OR the necessity]

**need** **1** [*see also*: necessity, require, necessary] By subtracting a constant if need be, we may assume..... • There is no need for the assumption that..... • However, with the recent advent of simulation based inference, the need for analytically tractable posteriors is no longer critical. • Hochberg pointed to the need for procedures that are more powerful than classical comparison methods. • Let us digress to locate the need for relative ergodicity in the above arguments. • However, we will be less explicit this time and we will have no need for the ergodicity arguments.
**2** [*see also*: require, necessitate, necessary] However, (9) needs handling with greater care. • The others being obvious, only (iv) needs proof. • A drawback to Pólya trees, and perhaps the main reason why they have not seen much application within the Bayesian nonparametric literature, is that an arbitrary partition tree needs to be specified. • We need to make the smallest possible jump. • To recover Wiener's famous result that Brownian paths are continuous, one needs to use more sophisticated reasoning. • This will help us find what conditions on $A$ are needed for $T(A)$ to be analytic. • For $F = R$, no integration over $M$ is needed in (5). • The only property of $M$ needed is local compactness. • More specialized notions from Banach space theory will be introduced as needed.
**3** [modal verb, in questions, negatives or with *only*; *see also*: have to] We need only consider three cases. [OR We only need to consider] • Only shifts with $k = 1$ need be considered. • It turns out that nothing more need be done to obtain..... • In that case $Y$ need only be metrizable (rather than completely metrizable). • Then $F$ need not satisfy (2). [= $F$ does not necessarily satisfy (2); *not*: "$F$ must not satisfy (2)"] • However, it need not be the case that $V > W$, as we shall see in the following example.

**negative** [*see also*: positive, minus] Theorem 1 provides an answer in the negative. • The only references known to the authors are [A] and [V], where the case $A = L(E)$ is settled in the negative. • Concretely, all degrees (both homological and intrinsic) of dual basis elements of $X'$ are the negatives of the degrees for the corresponding basis elements of $X$.

**neglect** [*see also*: disregard, ignore] Clearly, the contribution from those $r$ with $A(r) > 0$ can be neglected. • However, we prefer to avoid this issue altogether by neglecting the contribution of $B$ to $S$.

**negligible** We show that $A$ is negligible compared with $B$. • Note that $G$ has order $O(1)$ and as such will play a negligible role in what follows.

**neither** Neither (1) nor (2) alone is sufficient for (3) to hold. • Thus $A$ is neither symmetric nor positive. • Both $X$ and $Y$ are countable, but neither is finite. • Neither of them is finite. • [Use *neither* when there are two alternatives; if there are more, use *none*.] • Let $u$ and $v$ be two distributions neither of which has compact support. • As shown in Figure 3, neither curve intersects $X$. • In neither case can $f$ be smooth. [Note the inversion after the negative clause.] • Both proofs are easy, so we give neither. • Thus $X$ is not finite; neither ⟨nor⟩ is $Y$. • Neither is the problem simplified by assuming $f = g$.

**never** In representation theory, there can never be a $B$-map whose domain is finite-dimensional. • Most of the theorems presented here have never been published before. • If one studies the proof of..... it is apparent that (2) is never used. • If the boundary is never hit then $x_t$ is a Feller process under reasonable continuity assumptions.

**nevertheless** [*see also*: however, yet] Nevertheless, it might be possible to make sense of (2) even for non-injective $V$ by considering a multi-valued operator $Z$. • We show that nevertheless a positive proportion of the polynomials $B_n(x)$ satisfy Eisenstein's criterion.

**next** [*see also*: subsequently, then] The next three comparisons are:..... • Then take the next longest element, say $g_{k_2}$. • We show next that..... • Next, (1) shows that (2) holds whenever $g = f(n)$ for some $n$. • In this sequence, $p$ and $q$ are never next to each other. • the next-to-last inequality

**nice** [*see also*: neat] Neighbourhoods of points in these spaces appear at first glance to have a nice regular structure, but upon closer scrutiny, one sees that many neighbourhoods contain collections of arcs hopelessly folded up. • In the case of $M_n$, the corresponding symmetric group action on cohomology is particularly nice. • Homogeneous spaces are, in a sense, the nicest examples of Riemannian manifolds.

**nicety** It is clear that (up to set-theoretic niceties) this defines a partial order on the class of $R$-equivalence classes of Borel maps out of the given space $X$.

**no** This set has no fewer elements than $K$ has. [NOT "no less elements"] • The case $n = 2$ is of no interest since..... • For $F = R$, no integration over $M$ is needed in (5). • Thus $F$ has no pole in $U$ (hence none in $V$). • No $x$ has more than one inverse. • There is no map such that..... • For no $x$ does the limit exist. [Note the inversion after the negative clause.] • No two members of $A$ have an element in common. • We conclude that, no matter what the class of $b$ is, we have an upper bound on $M$.

**nomenclature** [*see also*: terminology] We borrow some nomenclature from the classical setting.

**non-** [Write consistently either *nontrivial* or *non-trivial* etc.; in some cases the hyphen is required: *a non-Euclidean metric, a non-locally convex space*; never write "non" as a separate word.] • for any noncompact set [NOT "for any not compact set"; you can only use *not* predicatively, e.g. *for any set that is not compact*]

**none** [*see also*: nothing] Thus $F$ has no pole in $U$ (hence none in $V$). • .....where none of the sums is of the form..... • Let $A_n$ be a sequence of positive integers none of which is 1 less than a power of two. • If there is an $f$..... then..... If there are ⟨is⟩ none, we define..... • It follows that the semigroup $S_t$ is none other than $e(t)T$. • The definition of $B_t$ given in Theorem 2 is none other than the dual formulation of the definition of $C_t$.

**nonetheless** It is typically not true that $B \subset cA$ for some constant $c$. Nonetheless, this intuition proves to be useful as it will help us identify how the requisite geometric structure arises.

**nor** Neither (1) nor (2) alone is sufficient for (3) to hold. • Clearly, $A$ is neither symmetric nor positive. • However, $X$ is not finite, nor is $Y$ countable. [Note the inversion.] • This topology is compact, but not usually Hausdorff, nor even $T_1$. • The goal of the present paper is to give a description of this kernel $T(G, H)$, valid for *all* $G$ and $H$, *in purely elementary terms*, notably not using stable categories, nor representations, but essentially only the action of $G$ by conjugation on the lattice of its $p$-subgroups. • We shall see that the scalar $u(g)$ does not depend on the choice of $\xi$, nor on the isomorphism class of $M$.

**norm** Among all $X$ with fixed $L^2$ norm, the extremal properties are achieved by multiples of $U$. • They defined the concept solely in terms of the norm of the Banach space, deliberately avoiding any extra structure. • This norm makes $X$ into a Banach space. • Then $F_n$ tends to $F$ in norm ⟨in the $L_p$ norm⟩. • a vector of norm 1

**normally** [*see also*: usually] We will not normally specify the index set $I$.

**not** For $m$ not an integer, the norm can be defined by interpolation. • For $f$ not in $B$,..... • This holds for any solution $U$ of (1) not a constant multiple of $v$. • However, $M$ is generally not a manifold. • It is not generally possible to restrict $f$ to the class $D$. • We note that $H$ is in fact not monotone if this condition is violated. • [Do not use *not* to negate an adjective placed before a noun. Write: *a non-monotone function*, and not: "a not monotone function".] • Is there a relation between $A$ and $B$? There certainly is not if..... • Now $f$ is independent of the choice of $\gamma$ (although the integral itself is not). • We will argue that $K$ must have maximum rank. Suppose not, meaning that $b(K) < n$. • There exists $E$ depending on $A$ but not on $r$, $x$ or $y$ such that..... • The bound does not depend on $n$ or $m$, nor on $k$ provided the latter is chosen large enough. [Note the use of *or*, and not "and", in the negative statement.] • Examples 1 and 2 give two operators, the former bounded and the latter not, with..... • Let us stress that $c$ is a term and not a subset of $C$. • Obviously, $S$ may be $P$, but it may also not be $P$. • The result above seems not to be a consequence of previous results. • However, it was simpler not to make use of them. • The ordered pair $(a, b)$ can be chosen in 16 ways so as not to be a multiple of $(c, d)$. • Why not increase the precision of these statements?

**notably** [*see also*: especially, particular, particularly] Section 2 contains some specific preparatory material, notably a brief discussion of the category of virtual vector bundles. [= the most important part of it being a brief discussion etc.] • The goal of the present paper is to give a description of this kernel $T(G, H)$, valid for *all* $G$ and $H$, *in purely elementary terms*, notably not using stable categories, nor representations, but essentially only the action of $G$ by conjugation on the lattice of its $p$-subgroups.

**notation** [*see also*: symbol] By abuse of notation, we continue to write $f$ for $f_1$. • For simplicity, we suppress the explicit dependence on $x$ in the notation. • If $G$ is clear from context, then we suppress reference to it in the notation. • This is in agreement with our previous notation. • In this chapter we shall depart from the previous notation and use the letter $m$ not for Lebesgue measure, but for Lebesgue measure divided by $(2\pi)^{1/2}$. • Standard Banach space notation is used throughout. For clarity, however, we record the notation that is used most heavily. • The reader is cautioned that our notation is in conflict with that of [3]. • Unfortunately, the notation from number theory slightly conflicts with the notation from probability theory. • Any other unexplained notation is as found in Fox (1995). • The notation $F < G$ will mean that..... • We set the following notation. • Let us introduce the temporary notation $Ff$ for $gfg^{-1}$. • One more piece of notation: throughout the paper we write..... for..... • From (ii), with an obvious change in notation, we get..... • We do not use (5) in our proofs, because it makes the notation more cumbersome. • With this notation, the two questions we pursue in the following are:..... • Here, we abuse notation slightly and use $P$ to also denote the homotopy class of $p$.

**notational** For notational convenience, set $q = p'$.

**notationally** We do not usually distinguish notationally between a structure and its underlying set.

**note** [*see also*: notice, observe, see, remark] Note that (3) is merely an abbreviation for the statement that..... • Perhaps it is appropriate at this point to note that a representing measure is countably additive if and only if..... • Part (b) follows from (a) on noting that $A = B$ under the conditions stated. • Before going to the proof, it is worth noting that..... • It should be noted that we are not yet in a position to assert the finiteness of either of these numbers. • ....., as noted ⟨as was noted⟩ in Section 2. [NOT "as it was noted"] • As noted before, there exists $N$ homeomorphic to $P$ such that..... • It should be noted that..... • With the exception noted below, we follow Stanley's presentation [3, Sec. 2].

**nothing** [*see also*: none] If $n = 1$, there is nothing to prove. • There is nothing to stop both sides of (1.8) from being $+\infty$. • The sort of problem which we are attacking has, on the face of it, nothing to do with differential algebra. [= When first considered, it seems to be unrelated to differential algebra.] • Even in the case $n = 2$, the application of Theorem 6 gives essentially nothing better than the inequality..... • It turns out that nothing more need be done to obtain..... • However, (ii) is nothing but the statement that..... [= only the statement that] • The identity $p(A) = 0$ is nothing other than the Cayley-Hamilton theorem. • If nothing else, I hope to convince my readers that Segal's theorem deserves recognition as a profound contribution to Gaussian analysis.

**notice** [*see also*: note, observe, remark] It is important to notice some of the weaknesses inherent in the above approach. • In 1988, while attempting to generalize this result, the second author noticed that..... • In our next theorem, we state a characterization of..... which does not seem to have been noticed previously. • The following result seems to have been unnoticed so far.

**notion** [*see also*: concept, idea] We describe how the notion of positivity relates to the other properties. • How are these two optimality notions related? In general, they are not. • This is where the notion of an upper gradient comes in. • There is a self-evident notion of a map between filtered spaces. • Although standard, the notion of a virtual vector bundle is not particularly well known. • Note that while the degree of a morphism may not be unique, the notion of having degree $k$ for a fixed $k$ is unambiguous. • There is a fourth notion of phantom map which bears the same relation to the third definition as the first does to the second. • Our notion of nonanalytic integral encompasses such well known examples as..... • More specialized notions from Banach space theory will be introduced as needed. • The benefit of formulating our notion of 'isomorphism section' as above will become clear shortly. • Are the notions of 'boundedly approximately amenable' and 'approximately amenable' the same?

**notoriously** However, Nielsen rank is a notoriously difficult invariant to compute and little is known when $n > 2$.

**novelty** Since most of the results presented are quite classical (the novelty lies in the arrangement, and some of the proofs are new), I have not attempted to document the source of every item.

**now** [*see also*: present, presently] The result will now be derived computationally. • Morera's theorem shows now that $f$ is holomorphic. • It suffices now to prove that $\Gamma_3 = \Gamma_2$. • Now that we have the above claim, we can select..... • Now choose a cycle $c$ in $M$ as in Theorem 2. • The following basic properties of spectral isometries are by now standard (see, e.g., [6]).

**nowhere** [*see also*: far] Here, of course, the set $A$ produced is rather thin and certainly nowhere near the densities we are looking for. [The phrase *nowhere near* indicates that $A$ is in fact far from reaching our expectations.] • a nowhere vanishing vector field

**number** **1** [*see also*: abound, many, numerous, profusion, several] Let $q$ be the maximum number of variables occurring in..... [Note the double *r* in *occurring.*] • The total number of vectors of this type is 36. • the number of elements of $X$ • the number of terms in the sequence $(a_n)$ such that..... • Nevertheless, in interpreting this conclusion, caution must be exercised because the number of potential exceptions is huge. • For size 1 this makes no difference, but for sizes 2 and 3 it considerably cuts down the number of cases to be considered. • All but a finite number of the $G_s$ are empty. [Note the plural.] • for all $n$ except a finite number • There are a large number of examples showing that..... [NOT "There is a large number"] • There are quite a number of cases, but they can be described reasonably systematically. • We give a number of results concerning..... [= several] • There are a number of equivalent definitions of the regular set.

**2** The elements of $D$ can be so numbered that..... • They are numbered in order of increasing diameter. • Number the successive segments of the boundary line between $A$ and $B$ (marked thickly in the picture) with the numbers $0, 1, ..., n$, starting at the bottom. • numbered in Arabic numerals • These from $G$ number 45. [= there are 45 of them] • The elements of $G$, numbering 122 in all, range from 9 to 2000.

**numerous** [*see also*: plentiful, abound, many, number, profusion] There are numerous results in the literature relating spectral conditions to invertibility of $f$. • This has numerous important consequences; to name just two, Brauer proved that.....

## O

**obey** [*see also*: satisfy] We first check that $t'$ obeys the condition for $f(t)$. • One easily checks that whenever a sequence $a_n$ obeys the uniform bound $a_n < C$, one has..... • It follows that any itinerary that obeys these four rules corresponds to a point in $B$.

**object** [*see also*: aim, purpose] The object of this section is to classify all the indecomposable $E$-modules. • The object of this paper is to obtain improvements in two cases, namely for forms of degree 7 and 11. • In general we will append a prime to objects if they refer to [ ]′. • Define the category $M$ to have as objects pairs of manifolds, and as morphisms.....

**objective** [*see also*: aim, idea, purpose, intention, task] This achieves our objective of describing..... • The objective is to choose a control $u$ so as to minimize..... • the key ⟨main/major/primary/principal/broad/ultimate/stated⟩ objective

**obscure** **1** Where it is possible, we outline the proofs so that the reader will not have to hunt for obscure references.
**2** However, the connection with Gromov's work has been obscured in recent years by an emphasis (in the algebraic topology literature) on configuration spaces.

**observation** [*see also*: remark, fact] The preceding observation, when looked at from a more general point of view, leads to..... • This simple observation lies at the heart of the proof of our first theorem. • The key ⟨fundamental⟩ observation is that if..... • We start with the observation that..... • Before proceeding, we first note the following observation. • Before we do this, we make an observation concerning $X$. • We shall have a number of opportunities in the following arguments to make use of this simple observation.

**observe** [*see also*: note, notice, remark] The observed values of $X$ will on average cluster around points where..... • Observe how the completeness of $L^2$ was used to guarantee the existence of $f$.

**obstacle** [*see also*: obstruction, prevent] The obstacle we have is that we must control the area of $G$. • It might seem at first that the only obstacle is the fact that the group is not compact. • There are two obstacles to this approach. • It is possible that the methods of this paper could be used to....., but there remain considerable obstacles to overcome. • We are able to surmount this obstacle by analysing the rate of convergence.

**obstruction** [*see also*: obstacle, prevent] But the $T_n$ need not be contractions in $L^1$, which is the main obstruction to applying standard arguments for densities.

**obtain** [*see also*: get, derive, gain] Theorem 2, at the end of Section 2, was not originally obtained in the manner indicated there. • A key step in obtaining (6) is Jensen's inequality. • We thus obtain $f = g$. [NOT "We obtain that $f = g$", "We receive $f = g$".] • Also, wherever possible, we work with integer coefficients, enabling us to obtain information about torsion. • See [17] for a brief account of the results obtained. [NOT "the obtained results"] • Let $f$ be the supremum of the lengths of the paths thus obtained.

**obvious** [*see also*: clear, evident, apparent, plain] Now (8) makes it obvious that..... • We regard (1) as a mapping of $S^2$ into $S^2$, with the obvious conventions concerning the point $\infty$. • We shall also refer to a point as backward nonsingular, with the obvious analogous meaning. • The others being obvious, only (iv) needs proof.

**obviously** [*see also*: clearly, manifestly, apparently] Its restriction to $M$ is obviously just $f$. • The left side of (3) obviously cannot decrease if $r$ increases. • Obviously, $G_n$ increases to $G$ as $n \to \infty$.

**occasion** [*see also*: sometimes] We take advantage of this fact on several occasions, by not actually specifying the topology under consideration. • This connection has been exploited on occasion [= sometimes] to construct various infinite families of regular maps. • This volume was originally intended as a celebration volume marking the occasion of N. Wiener's seventieth birthday.

**occasionally** [*see also*: sometimes, occasion] The following variant of Theorem 2 is occasionally useful.

**occur** [*see also*: arise, appear, emerge, happen, result] The only case requiring further analysis occurs when $f = 0$. • Both cases can occur. • We then provide constructions to show that each of the cases listed can actually occur. • All inputs of size $n$ are equally likely to occur. • Every nonincreasing function occurs as the rearrangement of some $C(P)$ function. • Equality occurs in (9) if..... • Where we could, we have chosen these examples from naturally occurring mathematical structures. [Note the double $r$ in *occurring.*]

**occurrence** Replace each occurrence of $b$ by $c$. • Throughout, $C$ denotes a positive constant, not necessarily the same at each occurrence.

**odds** [*see also*: chance, conflict] The odds that he will win are ten to one. • This is slightly at odds [= inconsistent] with the terminology of [4], as Fox defines the trace filter to be the normal filter generated by $A$.

**of** a vector of norm 1 • a ball of radius $r$ • an element of finite order • the group of invertible elements of $E$ • Actually, $S$ has the much stronger property of being convex. • This method has the disadvantage of not being intrinsic. • However, only five of these are distinct. • The best known of these is the Knaster continuum. • Of these, (i) and (ii) are almost immediate from the definition. • There has since been a series of improvements, of which we briefly mention the work of Levinson. • Suppose that of all such solutions, $(x, y, z)$ is one with $y$ minimal. • in nine cases out of ten [Use *out of* to indicate proportion.] • Theorem 2 of [8] • statement (ii) of Proposition 7 • However, this cannot be proved of the cardinal function $d(X)$. • For example, $F$ reaches a relative maximum of 5.2 at about $x = 2.1$. • The only additional feature is the appearance of a factor of 2.

**off** [*see also*: away, beyond, outside] a function with poles off $K$ ⟨vanishing off $K$⟩ • an extension of $f$ off $U$ • The kernel is $C^0$ on $X \times X$ off the diagonal. • a Blaschke product with at least one zero off the origin • If we stay a fixed distance off the critical line, we do not expect Benford behaviour. • We close this off by characterizing..... • Let $M'$ be the minor obtained by crossing off the last row and column of $M$. • Continuity then finishes off the argument. • This can be read off from (8). • For nonarchimedean $v$ there has been significant progress, but a proof of the general local correspondence still seems a long way off.

**offer** [*see also*: give, provide, furnish, supply] We offer numerical evidence to support a conjecture that there exist infinitely many primes of this type. • In this paper we offer some useful tools for bounding $d$-pseudoprimes. • We suspect that our methods should extend to offer at least some description of characteristic factor-tuples for larger numbers of commuting transformations. • We close this paper by offering some questions and problems for further research. • We are pleased to be able to offer this simple version of a technique which has hitherto been associated primarily with finite simple groups. • This proof is similar to the one offered here, but we wish to note that ours was conducted independently and posted on arXiv in 2016.

**offset** [*see also*: cancel, compensate] This decrease is offset by the contribution from the poles. • Offsetting the effect of the pole at $t = 0$ requires more work.

**often** [*see also*: frequently, repeatedly] It often does not matter whether..... • This property is of course already well known in many cases, often with little or no restrictions on $V$. • The parent and child relations often used with trees can be derived once a root is specified. • The question as to how often we should expect the class number to be divisible by $p$ is also of some interest. • infinitely often

**old** We shall need ways of constructing new triangulations from old ones which alter the $f$-vector in a predictable fashion. • This lends precision to an old assertion of Dini:..... • Although the definition may seem artificial, it is actually very much in the spirit of Darbo's old argument in [5].

**omission** There are finite measures for which the omission of (iv) would make (b) false.

**omit** [*see also*: drop, delete, remove, dispense with] The conclusion does not follow if continuity is omitted from the hypotheses. • So far it seems not to be known whether the geometric condition on $X$ can be omitted. • We omit further details. • The wedge denotes that $e_i$ has been omitted. • However, if $B$ were omitted in (1), the case $n = 0$ would imply $Nf = 1$, an undesirable restriction. • To simplify the writing, we take $a = 0$ and omit the subscripts $a$. • To save space, we will omit these edges from the diagrams.

**on** The proof is by induction on $n$. • For brevity, we drop the subscript $t$ on $h_t$. • Here $H$ is a free $R$-module on as many generators as there are path components of $X$. • Here $G$ is the alternating group $A_4$ on four letters. • the amount the gambler wins on the $n$th play • However, $A$ clearly has a topology $T$ on it, namely,..... • On making use of the bound..... we conclude that..... [= At the time of or immediately after making use] • On combining this with our other estimates in (3.5), we deduce that..... • This bound is integrable and on integration one again obtains the same form of..... • On restriction to $B$ we have a homomorphism $f : B \to C$. • We establish our results both unconditionally and on the assumption of the Riemann Hypothesis. • The following example shows that the degree of smoothness predicted by Theorem 6 cannot be improved on. • We now show the following improvement on (2). • This is essentially a variation on the prime number theorem. • We will call on this version of the inverse theorem when we come to our applications in Section 2. • We now move on to the question of local normal forms. • Then (5) takes on the form..... [OR takes the form]

**once** The parent and child relations often used with trees can be derived once a root is specified. • Once this is done, the proof continues thus:..... • Once the dissipation relation is in hand, no further work is required. • This procedure, once implemented, can thereafter be applied with great effectiveness. • Moreover, it follows at once from (1) that..... • Let us state once more, in different words, what the preceding result says if $p = 1$. • In [2] Marx et al. make the surprising observation that the convolution may not even be once differentiable if we replace 'continuously differentiable' by 'differentiable'.

**one** One more case merits mentioning here. • One reason for using this rather elaborate model is that it permits a simple and concrete definition of the realization. • One simple way to get a Banach algebra which is not amenable is to take..... • Our definition agrees with the one in [3]. • The cases $p = 1$ and $p = 2$ will be the ones of interest to us. • Consider the differences between these integrals and the corresponding ones with $f$ replaced by $g$. • It has some basic properties in common with another most important class of functions, namely, the continuous ones. • The geodesics (8) are the only ones that realize the distance between their endpoints. • Then the one and only integral curve of $L$ starting from $x$ is the straight line $l$. • Then $G$ has ten normal subgroups and as many non-normal ones. • The first two are simpler than the third one. [OR the third; *not*: "The first two ones"] • Now, $F$ has many points of continuity. Suppose $x$ is one. • Each of the functions on the right of (9) is one to which our theorem applies. • A principal ideal is one that is generated by a single element. • If $f$ is an $n$-simplex in $U$, then $f'$ is one in $V$. • Suppose that of all such solutions, $(x, y, z)$ is one with $y$ minimal. • In addition to a contribution to $W_1$, there may also be one to $W_2$. • Necessarily, one of $X$ and $Y$ is in $Z$. • Here the interesting questions are not about individual examples, but about the asymptotic behaviour of the set of examples as one or another of the invariants (such as the genus) goes to infinity. • Instead of dealing with lines one by one, we deal with collections of lines simultaneously. • The squarefree condition can again be checked one $p$ at a time. • Clearly, $A$ is thereby put in one-to-one correspondence with $B$. • The algorithm examines only roughly one-quarter to one-third of the characters. • Asymptotically, more than one-fifth of the polynomials $B_n(x)$ are irreducible. • The other player is one-third as fast. • [The numbers 1 to 12, when used for counting objects (without units of measurement), should be written in words: *There exists exactly one such map*; for other uses, sometimes figures permit avoiding ambiguity, e.g. *it is 1 less than the other.*]

**ongoing** Our work is a contribution to ongoing efforts to classify the finite primitive permutation groups with base size 2.

**only** [*see also*: alone, just, merely, single, solely] Assume that the only functions $v$, $w$ satisfying (2) are $v = w = 0$. • Then the one and only integral curve of $L$ starting from $x$ is the straight line $l$. • Here $\{x\}$ is the set whose only member is $x$. • The problem is to move all the discs to the third peg by moving only one at a time. • However, only five of these are distinct. • Note that $F$ is defined only up to an additive constant. • We need only consider the case..... [OR We only need to consider] • The proof will only be indicated briefly. • We have to change the proof of Lemma 3 only slightly. • To prove (8), it only remains to verify that..... • Thus $X$ assumes the values 0 and 1 only. • Only for $x = 1$ does the limit exist. [Note the inversion.] • Only later did their connection to the octonions become clear. • If we know a covering space $E$ of $X$ then not only do we know that..... but we can also recover $X$ (up to homeomorphism) as $E/G$. • However, for these techniques to succeed, not only must one variable of (3.1) be free to take on any colour, but it is also necessary for the solution set to possess a well-factorable parametrization, allowing for the theory of multiplicative functions to come into play.

**onwards** from line 6 onwards

**open** [*see also*: unresolved, unanswered] These results leave open the basic case $k = \omega$. • Conjecture 2 of [KH], to the effect that [=meaning that] there is no relation $P$ with $E(P) = 1$, still remains open.

**operate** [*see also*: act] When operated on by a rotation, each of these vectors is mapped to..... • ....., where $\mathrm{sign}(z)$ operates entrywise on a vector $z$.

**opportunity** We take this opportunity to correct a minor error in Lemma 2 of [PS]. • We shall have a number of opportunities in the following arguments to make use of this simple observation.

**oppose** [*see also*: contrary, contrast, unlike] As opposed to the situation considered in [5], the functions used here are..... [NOT "Contrary to the situation"] • The rest of the paper concerns the existence of greedy bases (as opposed to basic sequences).

**opposite** [*see also*: reverse] For the opposite inclusion, suppose that..... • the opposite inequality • Then $D$ is the face of the simplex $s$ opposite to $A$. [OR opposite $A$] • (see the page opposite)

**optimize** The argument is completed by optimizing in ⟨over⟩ $\lambda$.

**or** There is no recursive or definable $R$ such that..... • The bound does not depend on $n$ or $m$, nor on $k$ provided the latter is chosen large enough. [[NOT "The bound does not depend on $n$ and $m$."] • The answer depends on how broadly or narrowly the term 'matrix method' is defined. • If..... then $R$ is right Noetherian provided $R$ is semiprime [2] or commutative [4] or $R/N$ has zero socle. • The case when $f$ is decreasing can be proved similarly, or else can be deduced from..... • Then $f = g$, or equivalently $a(f) = a(g)$. • Here the interesting questions are not about individual examples, but about the asymptotic behaviour of the set of examples as one or another of the invariants (such as the genus) goes to infinity. • Moreover, for $L$ tame or otherwise, it may happen that $E$ is a free module. • Then $F$ may or may not fix $B$. • The question we shall be concerned with is whether or not $f$ is..... • Its role is to rule out having two or more consecutive $P$-moves. • Any vector with three or fewer 1s in the last twelve places has at least eight 1s in all. • The intervals we are concerned with are either completely inside $A$ or completely inside $B$. • By Corollary 2, distinct 8-sets have either zero, two or four elements in common. • Either $f$ or $g$ must be bounded. • Any map either has a fixed point, or sends some point to its antipode.

**order** **1** [*see also*: arrangement, organization] Comparisons are done in left-to-right order. • They are numbered in order of increasing diameter. • The diagram of $L+M$ is obtained by taking the rows of the diagrams of $L$ and $M$ and reassembling them in order of decreasing length. • Let $A$ and $B$ be its two parts, named in random order. • in reverse order • arranged in increasing order • ....., where the inequalities follow in order from the first condition of (2), Hölder's inequality, and Assumption 5. • The interchange in the order of integration was legitimate, since..... • One is tempted to reverse the order of integrations but that is illegitimate here. • Such a bimodule can equivalently be viewed as a $DA$ bimodule over $(A^{op}, A'^{op})$; this perspective is responsible for the reversal of order in the sequences above. • The first 15 chapters should be taken up in the order in which they are presented, except for Chapter 9, which may be postponed. • Let $\varphi$ be an order $r$ automorphism of $X$. • an element of order a power of $p$ • an element of prime power order • Then $F$ has continuous $y$-derivatives of all orders ⟨up to order $k$⟩. • Thus $F$ vanishes to order 3 ⟨to infinite order⟩ at $x$. • Unfortunately, the details of the calculations were omitted, and there is some doubt on whether the result is correct since our analysis suggests that $P_2$ must vanish to third order; the presence of $L^{-2}$ is also suspect. • a second order equation [OR a second-order equation] • In all our analysis, only the order of magnitude of $P$ will be significant. • A form of the central limit theorem is used to show that for large $n$, $E(R_n)$ is on the order of $c\sqrt{n}$, from which it follows that $E(R_n - S_n)$ does not drop below the order of $n^{4/3}$. • Note that $G$ has order $O(1)$ and as such will play a negligible role in what follows. • First, some remarks concerning the term 'closure' are in order. • In order to make our description of this process precise, we define.....

**2** [*see also*: arrange, organize] We partially order $M$ by declaring $X < Y$ to mean that..... • Let $P$ be the set of all intervals in $J$ ordered by inclusion.

**organization** [*see also*: order, arrangement, outline] The organization of the paper is the following.

**organize** [*see also*: arrange, order] The paper is organized as follows. • Our presentation is therefore organized in such a way that the analogies between the concepts of topological space and continuous function, on the one hand, and of measurable space and measurable function, on the other, are strongly emphasized.

**origin** [*see also*: source] The word 'singular' as applied to measures has its origin in this phenomenon. • a ball of radius $r$ about the origin

**original** [*see also*: first] We now turn to Gromov's original result. • This was one of the major steps in Wiener's original proof of his Tauberian theorem.

**originally** [*see also*: initially, beginning, first] Theorem 2, at the end of Section 2, was not originally obtained in the manner indicated there.

**originate** [*see also*: start, derive] This theory was originated by Gelfand in 1941. • The argument is now completed by means of techniques originated in the work of Stolz [3]. • This definition originates with Jones [5]. [OR from Jones]

**other** [*see also*: different] Every region in the plane (other than the plane itself) is conformally equivalent to $U$. • Clearly, $A_\infty$ weights are sharp weights. That there are no others is the main result of Section 2. • Then $V$ has the following invariant subspaces, and no others:..... • The others being obvious, only (iv) needs proof. • This theorem (and others in the paper) are deduced from a general result which, roughly speaking, says that..... • It follows that the semigroup $S_t$ is none other than $e(t)T$. • The identity $p(A) = 0$ is nothing other than the Cayley-Hamilton theorem. • Each vertex is adjacent to $q$ others. • Two other facts we shall use are the following. • The other inequality is just as easy to prove. [= the other of the two mentioned] • the other end of the interval • In this and the other theorems of this section, the $X_n$ are any independent random variables with a common distribution. • One of these lies in the union of the other two. • On combining this with our other estimates in (3.5), we deduce that..... • Any other unexplained notation is as found in Fox (1995). • The next corollary shows among other things that..... [NOT "among others"] • Our result generalizes Urysohn's extension theorems, among others. [= among other theorems] • It was later developed in a measure-theoretic context by Kantorovich [7] and Ornstein [11], among others. • These $n$ disjoint boxes are translates of each other.

**otherwise** [*see also*: contrary] We must have $Lf = 0$, for otherwise we can replace $f$ by $f - Lf$. • We claim that $f(z) > 1$. Otherwise, the disc $D$ would intersect $B$. • We now prove..... Indeed, suppose otherwise. Then..... • Besides their possible role in physics, the octonions are important because they tie together some algebraic structures that otherwise appear as isolated and inexplicable exceptions. • Unless otherwise stated, we assume that..... • Moreover, for $L$ tame or otherwise, it may happen that $E$ is a free module. • Simplicity (or otherwise) of the underlying graphs will be discussed in the next section.

**ought** There ought therefore to be a point $x$ such that..... • At this point, we ought to recall that Frob is a well defined conjugacy class in $G$. • Langlands [5] suggested that there ought to be a universal group $L$ whose $n$-dimensional representations parametrize automorphic representations of $GL(n)$.

**out** in nine cases out of ten [Use *out of* to indicate proportion.] • Define $a_k$ to be the probability that exactly $k$ out of the $2n$ values $X_i$ exceed $T$, conditional on $X_0 > T$. • The only edges out of 3 lead to 2 or into $B$. • It is clear that (up to set-theoretic niceties) this defines a partial order on the class of $R$-equivalence classes of Borel maps out of the given space $X$. • A second technique for creating new triangulations out of old ones is central retriangulation. • The detailed analysis of..... is carried out in Section 2. • This term drops out when $f$ is differentiated. • We were surprised to find out that..... ⟨at finding out that.....⟩ • This accords with the intuition that as we pass down the coding tree, we find out more and more detailed information about the ordering actually represented. • Our study grew out of some valuable conversations with Kirk Douglas. • We lay out the details of this generalization in the first part of this paper. • The image of $U$ under $f$ misses out more than three points of the sphere. • Then $A = B$, as one sees by multiplying out the product on the right. • One unusual feature of the solution should be pointed out. • To round out the picture presented by Theorem 5, we mention the following consequence of..... • The possibility $A = B$ is ruled out in the same way. • By modifying the technique set out [= presented] in [3], we obtain..... • With this definition of a tree, no vertex is singled out as the root. • It turns out that these properties play no role in the proof. • By writing out the appropriate equations, we see that this is equivalent to.....

**outcome** [*see also*: effect, result] At first glance Lemma 2 seems to yield four possible outcomes. • It is impossible to predict the eventual outcome of the process. • It produces the same outcome whichever path is taken. [= no matter which] • We tabulate the outcome for $n \geq 10$; in particular, the column headed $R$ lists $R(n)$ truncated to three decimal places.

**outline** [*see also*: sketch, organization] **1** In brief outline, here is the main idea of the proof. • In outline, the argument follows that of the single-valued setting, but there are several significant issues that must be addressed in the $n$-valued case. • The outline of this paper is as follows.
**2** We shall briefly outline the necessary changes. • Where it is possible, we outline the proofs so that the reader will not have to hunt for obscure references.

**outnumber** In that population, women outnumbered men ⟨by⟩ 2 to 1.

**output** **1** The original construction was an algorithm that took as input a finite presentation for a group $Q$ and gave as output a presentation for the group $G(Q)$.
**2** The algorithm outputs a list of.....

**outset** [*see also*: beginning, start] We remark at the outset that this formula makes sense, because..... • It seems preferable, for clarity's sake, not to present the construction at the outset in the greatest generality possible.

**outside** [*see also*: beyond, away, off] The family of 4-sets will be used to generate a symmetry outside $N$ but in $M$. • Outside the fixed points, the group $T$ acts freely on $M$. • Then $C^*$ is a cohomologically perfect complex of $A$-modules that is acyclic outside degrees one and two. • In the latter case we may simply adjust $F$ to equal 1 on the Borel set where it falls outside the specified interval. • In the present paper we move outside the random walk case and treat time-inhomogeneous convolutions.

**outstanding** an outstanding scientist [= excellent] • Two tasks still remain outstanding. [= not done]

**outward(s)** It is sufficient to prove that this vector field points outwards on $\partial M$. • [In most adverbial uses, *outward* and *outwards* are interchangeable; as an adjective, the more standard form is *outward*: *the outward layer*.]

**over** Note that $F$ is the product over the integers $m$ in $B$. • Hence $V(x)$ is the maximum value of $J_x(v)$ over all controls $v$. • .....where $E$ runs over the family $B$. • To show the greater simplicity of our method over Brown's, let us..... • Over the past ten years the isomorphic structure of spaces of weighted holomorphic functions has been largely [= almost completely] determined. • Firms employing over 1000 people accounted for 50% of total employment. [= represented 50%] • The method of proof carries over to domains satisfying..... • The equation $PK = 0$ then goes over to $QK = 0$. • Here $s$ takes over the role of the time parameter.

**overall** Now (c) asserts only that the overall maximum of $f$ on $U$ is attained at some point of the boundary.

**overcome** [*see also*: circumvent, get around] To overcome this problem, we revise our definition of a branch. • It is possible that the methods of this paper could be used to....., but there remain considerable obstacles to overcome. • The difficulties that prevented us from proving Theorem A in [BG] are overcome here using two new ideas.

**overlap** The two categories overlap to some extent. • When $r < 1$, the ball $B(x, r)$ overlaps with only one ball $B_j$. • non-overlapping intervals

**overlook** [*see also*: miss] Our first result generalizes (8) by exploiting some general facts seemingly overlooked by the aforementioned authors.

**overview** [*see also*: survey] We start with a brief overview of our strategy. • Section 2 contains an overview of the necessary background.

**owe** The present paper owes a great debt to Strang's work. • The exposition owes much to the work of Dold described in [3].

**own** Theorem 2 is interesting in its own right.

## P

**page** on page 13 [NOT "on the page 13"] • at the top of page 4 • (see the last paragraph but one of page 24) • (see the page opposite) • Our method of proof will be an adaptation of the reasoning used on pp. 71–72 of [3].

**pair** **1** The ordered pair $(a, b)$ can be chosen in 16 ways so as not to be a multiple of $(c, d)$. • There cannot be two edges between one pair of vertices.
**2** Write out the integers from 1 to $n$. Pair up the first and the last, the second and next to last, etc.

**paper** [*see also*: article] in paper [3] [OR in the paper [3]; *better*: in [3]] • in a companion paper [4] • The aim of this paper is to bring together two areas in which..... • In the present paper we move outside the random walk case and treat time-inhomogeneous convolutions. • There are, however, a few important papers of which we were unaware until fairly recently. • These volumes bring together all of R. Bing's published mathematical papers.

**paragraph** [indented fragment of text; $\neq$ section] Let the notation be as in the preceding paragraph. • As the first paragraph of the proof will make clear, we can choose $f$ in such a way that..... • To prove the desired exactness we again adopt the set-up of the first two paragraphs of the proof. • (see the last paragraph but one of page 24)

**parallel** **1** The proof runs parallel to that of Lemma 2. [NOT "parallelly"]
**2** From the viewpoint of the Fox theorem, there is not an exact parallel between the odds and the evens.
**3** The proof closely parallels that of Theorem 1.

**parameter** The parameter interval was here taken to be $(0, 1)$. • Here $s$ takes over the role of the time parameter. • Now $N(H, G)$ has a binomial distribution with parameters $(m, L)$.

**parametrize** [= parameterize] a curve parametrized on the interval $[0, 1]$

**paraphrase** The motivation for the results of this section is the following result of John (paraphrased slightly to suit our purposes).

**parenthesis** [*pl.* parentheses; *see also*: bracket] With no parentheses, $\vee$ and $\wedge$ take priority over the group operation. • the expression in parentheses

**part** [*see also*: role] This is part of a larger project to study the Galois groups of periodic points of arbitrary polynomial maps. [OR This is a part] • Part of the conclusion is that $F$ moves each $z$ closer to the origin than it was. • The equality $f = g$, which is part of Theorem 2, implies..... • This is the hard part of Jones's theorem. • The 'if' part is straightforward. • Translations have already played an important part in our study of Fourier transforms. • The key part is to show that the submanifolds $U_k$ fit together to form a complex submanifold. • A large part of this paper is therefore devoted to obtaining good bounds for Fourier coefficients. • Mary Lane deserves our special thanks for her part in bringing this volume to a successful completion. • Definition 3 is motivated in part by certain differential operators to be introduced in Section 3. • The argument is based in part on the following lemma which we present without proof. • This paper, for the most part, continues this line of investigation. • the greater ⟨significant/substantial/principal/central/indispensable/integral/easy⟩ part

**partial** As a partial answer to that question, we prove that..... • However, it is not known when $L(S)$ is weakly amenable; for some partial results, see [BS]. • If $p > 2$ then Theorem 2 satisfactorily solves the 'conjugation invariants' problem for the mod $p$ Steenrod algebra, in marked contrast to the partial solution available when $p = 2$.

**partially** [= partly] Research partially supported by NSF Grant No. 23456.

**particular** [*see also*: specific, concrete, notably] When it is necessary to emphasize one particular coordinate, we write..... • The probability that any particular edge is a bond is $2p$. • Rather than discuss this in full generality, let us look at a particular situation of this kind. • Here the constants of proportionality depend on the particular curve being considered. • One might hope that in the particular case of the GL energy, this could be established, but we do not see an easy path to such a conclusion. • In particular, $E$ contains a copy of $l_1$. [NOT "Particularly, $E$ contains"] • So we must in particular show that sets like this are not added.

**particularly** [$\neq$ in particular; *see also*: especially] This realization is particularly convenient for determining..... • Although standard, the notion of a virtual vector bundle is not particularly well known. • We make the following provisional definition, which is neither general nor particularly elegant, but is convenient for the induction which is to follow. • There is also a decrease in clustering as $n$ increases, particularly for normally distributed $X$.

**partition** **1** Intuitively, entropy of a partition is a measure of its information content—the larger the entropy, the larger the information content. • a partition of unity subordinate to the covering $\{U_i\}$ [OR subordinated]
**2** We can partition $[0, 1]$ into $n$ intervals by taking.....

**pass** [*see also*: by-product, incidentally, turn] This enables us to pass from a compact group $G$ to a maximal torus $T$. [OR enables passing, NOT "enables to pass"] • Passing to a subsequence if necessary, we can assume that..... • Before passing to (4)(b), we observe that..... • Every path on $G$ passes through vertices of $V$ and $W$ alternately. • The approximation property does not pass to general quotients. • We note in passing that Fox has subsequently improved Barnes's result by showing that..... • It seems appropriate to mention in passing the corresponding formula for the cohomology of $B_n$.

**passage** [*see also*: transfer, transition] The passage from bounded $f$ to general $f$ is easily effected. • The properties of $A$ are preserved in the passage from $V$ to $C(V)$. • Now (1) follows after passage to the limit as $n \to \infty$. • The first morphism here is the canonical 'passage to cohomology' morphism.

**path** One might hope that in the particular case of the GL energy, this could be established, but we do not see an easy path to such a conclusion. • a path starting ⟨terminating⟩ at $x$ • a path obtained by going from $A$ to $B$ along the lower half of the circle

**pattern** **1** [*see also*: model, scheme] Other types fit into this pattern as well. • The proof that $a < b$ follows the standard pattern. • Thus, although we follow the general pattern of proof of Theorem A, we must also introduce new ideas to deal with the lack of product structure.
**2** [*see also*: model] The proof is patterned upon ⟨after⟩ Section 2 of [6].

**pay** This has the effect of making our theorems look less elegant than their counterparts in [KJ], but this seems to be the price to pay for complete generality.

**peculiar** [*see also*: characteristic] We base our development on two properties of prolongation peculiar to this case. [= only found in this case]

**penultimate** [= next to last] The penultimate inequality is justified by the fact that..... • Then....., where the fact that $A = B$ was used on the penultimate line.

**percent** [= per cent] About 40 percent of the solar energy is concentrated in the region..... • an increase of 5% ⟨a 5% increase⟩ in the cost of living • At least 26% of the curves in $S$ have rank 1. • The quantity $A$ was greater by a mere 20%. • Quarterly sales rose by 9% compared with the same period in 2007. • % increase on previous year [in a diagram caption] • Firms employing over 1000 people accounted for 50% of total employment. [= represented 50%] • Subsidies on these commodities total 25 per cent of the budget.

**percentage** [*see also*: proportion] A positive percentage of summands occur in all the $k$ partitions. • Selberg [Sel] was the first to prove that a positive percentage of zeros lie on the critical line. • A small percentage reduction in the cost of materials resulted in a significant increase in profit.

**perform** [*see also*: carry out, make] These calculations can be performed entirely in terms of the generators of $G$. • Its role is to rule out having two or more consecutive $P$-moves (on the grounds that they can be performed in one go).

**perhaps** [*see also*: possibly] After, perhaps, passing to a subsequence, we have..... • Perhaps it is appropriate at this point to note that a representing measure is countably additive if and only if..... • Perhaps the most important problem involving $f$-vectors is whether or not John's conditions extend to spheres. • A drawback to Pólya trees, and perhaps the main reason why they have not seen much application within the Bayesian nonparametric literature, is that an arbitrary partition tree needs to be specified.

**period** Each period 3 orbit of $F$ leads to five period 2 orbits of $F^3$. • a map of period $p$ in $t$

**periodic** a $2\pi$-periodic function

**permission** The final lemma is due to F. Black and is included with his kind permission.

**permit** [sth; sb to do sth; *see also*: admit, allow, enable, let] This will permit us to demonstrate that..... [NOT "permit to demonstrate"] • This permits the extension of boundary estimates to systems of type II. • One reason for using this rather elaborate model is that it permits a simple and concrete definition of the realization. • Section 6 contains a formula which permits transfer of the results in Section 2 to sums of independent random variables. • Note that $m$ is permitted to vary with the number of inputs. • Here the right side is permitted to be infinite. • In contrast to [1], we permit the metric to be incomplete.

**permute** If $a$, $b$, and $c$ are permuted cyclically, the left side of (2) is unaffected.

**persist** [*see also*: continue, remain] This inequality persists as $r \to 1$. [= continues to hold] • A substantial no-man's-land persists in which neither alternative has been proved. • This leaves the hope that a ratio theorem may persist in a more general setting.

**person** Such an expression is provided by the following result of Gess [5], later proved in other ways by various persons.

**perspective** [*see also*: view, viewpoint] This puts a completely different perspective on Fox's results. • Those results permit us to view this fragment of the theory from a broader perspective. • A change in perspective allows us to gain not only more general, but also finer results than in [ST]. • a new ⟨wider/proper/right/wrong/theoretical⟩ perspective

**pertain** [to sth; = be related or relevant to sth] The paper provides a proof of a combinatorial result that pertains to the characterization of..... • The author gratefully acknowledges the referee's helpful comments pertaining to the first draft of this paper.

**pertinent** [*see also*: relevant, connect] He proved the following theorem (see Section 2 for pertinent definitions).

**phenomenon** [*pl.* phenomena] Formula (7) exhibits the same phenomenon. • This rather counterintuitive phenomenon is exhibited by the following example. • This phenomenon is called overconvergence. • The word 'singular' as applied to measures has its origin in this phenomenon. • a universal ⟨isolated/curious/remarkable/complex⟩ phenomenon

**philosophy** This exemplifies a well-used philosophy in Ramsey theory that underlying every partition result there is some notion of largeness.

**phrase** [*see also*: reformulate, rephrase, restate] **1** The only item that is not covered by the preceding discussion is (5), where the phrase "one may assume" needs explaining.
**2** Here is an alternative phrasing of part (1):.....

**pick** [*see also*: choose, select] Pick the first arc of length 1 in this sequence. • We can continue to pick elements of $B$ as above. But there are only finitely many such, a contradiction.

**picture** **1** In Section 4 we worked out a fairly detailed picture of linear $H$-systems. • To round out the picture presented by Theorem 5, we mention the following consequence of..... • This first construction explains how weak $H$-homomorphisms enter the picture. [OR enter into the picture] • The skew diagram L-M is the shaded region in the picture below. • The picture on the right shows the dividing line $\alpha$, drawn thick.
**2** [*see also*: represent] This is easy to picture geometrically because.....

**piece** **1** We now start piling the pieces on top of each other. • One more piece of notation: throughout the paper we write..... for..... • All the pieces are now in place to prove Theorem 5.
**2** [*see also*: combine, gather] The liftings on $A$ and $B$ agree on $A \cap B$, hence we can piece them together to obtain..... • Piecing the above observations together, we can now show that.....

**pioneer** [sth; in sth] But there is some hope that one could use the higher-order theory pioneered by Gowers.

**place** **1** [*see also*: location, position, replace, instead] .....where 1 appears in ⟨at⟩ the $n$th place • Any vector with three or fewer 1s in the last twelve places has at least eight 1s in all. • Values computed for the right side of (2) were rounded up in the fourth decimal place. • We tabulate the outcome for $n \geq 10$; in particular, the column headed $R$ lists $R(n)$ truncated to three decimal places. • Apply this to $f$ in place of $g$ to obtain..... • Then the conclusion holds with 'P-cell' in place of 'cell'. • All the pieces are now in place to prove Theorem 5. • All of the action in creating $S_{i+1}$ takes place in the individual cells of type 2 or 3. • While the whole construction takes place outside $N$, any finite initial segment is in $N$. • Moreover, one has estimates on the rate at which this convergence is taking place.
**2** [*see also*: put, insert, impose] Some restrictions must be placed on the behaviour of $f$. • Essentially, the conditions placed on $A$ serve to ensure that $B$ is 'free enough' for the definition of $G$ to work. • To place Theorem 1 in context, consider two real vector fields..... • In this section we gather some miscellaneous results that are more or less standard. These will be used to calculate the constants $c_\alpha$, and we place them here to avoid interrupting the forthcoming arguments.

**plain** [*see also*: clear, obvious, evident, apparent] But this last assertion follows from Corollary 2, it being plain that..... [= because it is plain]

**plausible** [= very likely; *see also*: possible] It seems plausible that..... but we have been able to establish this only in certain cases.

**play** **1** Bruck's theorem on common fixed points for commuting nonexpansive mappings is then brought into play by noting that..... • However, for these techniques to succeed, not only must one variable of (3.1) be free to take on any colour, but it is also necessary for the solution set to possess a well-factorable parametrization, allowing for the theory of multiplicative functions to come into play.
**2** It turns out that these properties play no role in the proof. • In closing this section we take up

a result which will play a pivotal role in the characterization of..... • Translations have already played an important part in our study of Fourier transforms.

**please** We are pleased to be able to offer this simple version of a technique which has hitherto been associated primarily with finite simple groups.

**plentiful** [*see also*: numerous, abound, profusion, variety, abundance] On the other hand, if $d$ is a square, then Lucas primes appear to be plentiful.

**plug** [*see also*: insert, put] After plugging this estimate into (2), we conclude that..... • ....., which when plugged back into (4) yields the desired conclusion.

**plus** Thus $A$ is the union of $B$ plus an at most countable set. • Therefore $F$ is at most a multiple of $G$ plus a contribution from.....

**point** **1** [*see also*: issue, subject, matter, thing, topic] The preceding observation, when looked at from a more general point of view, leads to..... • It is this point of view which is close to that used in $C^*$-algebras. • The point of the lemma is that it allows one to..... • The point is that the operator is now much easier to analyse than is the case in the original setting of the space $B$. • The key point of the proof of Proposition 6 is that each subset..... • An important point is that..... • The only point remaining concerns the behaviour of..... • In [2], this theorem is made the starting point of Gelfand theory. • See [KT] for discussion of this technical point. • We shall not pursue this point here. • We would like to know..... but that is beyond our reach at this point. • At this point, the reader is urged to review the definitions of..... • Perhaps it is appropriate at this point to note that a representing measure is countably additive if and only if..... • The arguments from this point up to Theorem 2 do not depend on..... • It can be shown that the nearest point projection $p$ reduces length by a factor of $\cos\alpha$.
**2** The vector $v$ points in the negative direction ⟨points north⟩ for $x < 0$. • The vector points outwards from $M$. • It is sufficient to prove that this vector field points outwards on $\partial M$. • Here $M$ is a unit vector normal to $\partial M$ pointing into $M$. • the inward pointing unit normal to $\partial M$ • All the evidence points to the validity of the conjecture. • Hochberg pointed to the need for procedures that are more powerful than classical comparison methods. • One unusual feature of the solution should be pointed out. • However, as pointed out right after (5),.....

**poorly** Presumably better results could be obtained by studying the obvious analogue of....., but for $l$ not prime this is poorly understood.

**portion** The major portion of one direction of the proof is contained in the previous proof.

**pose** [*see also*: present, raise] We now pose a problem whose solution will afford an illustration of how the Plancherel theorem can be used. • The factor $Gf$ poses no problem because..... • [Do not write "We pose $f =$....." if you mean *We set* ⟨*define*⟩ $f =$.....]

**position** [*see also*: location, place] Then $K$ appears in the last position in the list. • The vector $v$ has at least $n$ ones in its last $m$ positions. • This is the same as asking which row vectors in $R$ have differing entries at positions $i$ and $j$. • We are now in a position to prove our main result. [*Better*: We can now prove] • It should be noted that we are not yet in a position to assert the finiteness of either of these numbers. • This puts us in a position to apply Lemma 2 to deduce that..... • After receiving his PhD he took a position at the University of Texas.

**positive** [*see also*: affirmative] This question was answered negatively in [5]. However, on the positive side, Davies [5] proved that..... • By allowing $f$ to have both positive and negative coefficients, we obtain..... • Here $u^+$ and $u^-$ are the positive and the negative parts of $u$, as defined in Section 5. • We show that nevertheless a positive proportion of the polynomials $B_n(x)$ satisfy Eisenstein's criterion. • However, $F$ is only nonnegative rather than strictly positive, as one may have expected. • Let $Q$ denote the set of positive definite forms (including imprimitive ones, if there are any).

**positively** What is $F(c)$ if $c$ is a positively oriented circle?

**possession** [*see also*: have, presence] Hence, the possession of Willard terms implies $X = A$.

**possibility** [*see also*: case] The possibility $A = \emptyset$ is not excluded. • The only possibility for $G$ not to be 1-1 is that there exists..... • The remaining possibility is that $v$ is labelled 2. • These two possibilities cannot arise simultaneously. • However, this still left open the possibility that the converse of Theorem 3 held for $m = 3$. • The reader may wonder why we have apparently ignored the possibility of obtaining a better lower bound by considering..... [NOT "the possibility to obtain"]

**possible** [*see also*: feasible, likely, plausible, enable] It is not generally possible to restrict $f$ to the class $D$. • It is possible for the hull of $J$ to have exactly two points. • Is it possible to have $m(E) < 1$ for such a set? • the shortest possible way • the maximum possible density • This result is best possible. [OR the best possible] • The above bound on $a_n$ is close to best possible. • We shall try to give it the simplest representation possible. • It seems preferable, for clarity's sake, not to present the construction at the outset in the greatest generality possible. • Every possible such sequence gives rise to..... • Then, for any two fixed points that Wagner's method does not find to be equivalent, he considers the possible lengths of potential solutions to (1). • We wish to arrange that $f$ be as smooth as possible. • For this purpose, it is necessary to understand the mapping properties of $B$ on as large a function space as possible. • We follow where possible the argument of Lang [9]. • Also, wherever possible, we work with integer coefficients, enabling us to obtain information about torsion. • This makes possible the proof of..... • This makes it possible to show that..... [Note that the *it* is necessary here.]

**possibly** [≠ eventually; *see also*: perhaps, conceivably, presumably] The only points $(z, w)$ at which the continuity of $g$ is possibly in doubt have $z = 0$. • Clearly, $F$ is invertible except possibly on an at most countable set. • The cohomology groups $H^q(E)$ all vanish except possibly in one single dimension. • We define a (possibly unbounded) operator $A$ by..... • Although individually these systems can still be quite complicated, a possibly more tractable task is to describe their possible joint distributions. • This yields (5) again (possibly with a different $C$). • We say that $L$ is *finitely aligned* if $A(L)$ is finite (possibly empty).

**post-** The theory of elementary divisors now shows that by pre- and post-multiplying $x$ by suitable elements of $K$ we can reduce $x$ to a diagonal matrix. • The automorphism groups $\mathrm{Aut}(F)$ and $\mathrm{Aut}(G)$ act on the set of such epimorphisms by pre-composition and post-composition, respectively.

**post** This proof is similar to the one offered here, but we wish to note that ours was conducted independently and posted on arXiv in 2016. • The present article is an updated version of our work [D], the main body of which was first posted to the arXiv in 2013.

**postpone** [*see also*: defer] We postpone the proof to Section 2. • The first 15 chapters should be taken up in the order in which they are presented, except for Chapter 9, which may be postponed.

**potential** Then, for any two fixed points that Wagner's method does not find to be equivalent, he considers the possible lengths of potential solutions to (1). • Nevertheless, in interpreting this conclusion, caution must be exercised because the number of potential exceptions is huge.

**power** an element of prime power order ⟨of order a power of $p$/of $p$-power order⟩ • Raising this to the $p$th power [= to the power $p$], we obtain..... • Every prime in the factorization appears to an even power. • Expand $f$ in powers of $x$. • the space of $p$th power integrable [= $p$-integrable] functions • Let $A_n$ be a sequence of positive integers none of which is 1 less than a power of two. • The true power of Theorem 3 begins to emerge when we see that (5) implies Young's inequality.

**practically** [*see also*: almost, nearly] However, in many applications the existence of such an $R$ is practically impossible to verify.

**practice** In addition to illustrating how our formulas work in practice, it provides a counterexample to Brown's conjecture. • In practice, $D$ is usually too large a set to work with. • [In British English, *practice* is a noun, and *practise* is a verb; in American English, both spellings are used for both noun and verb forms.]

**pre-** The theory of elementary divisors now shows that by pre- and post-multiplying $x$ by suitable elements of $K$ we can reduce $x$ to a diagonal matrix. • The automorphism groups Aut($F$) and Aut($G$) act on the set of such epimorphisms by pre-composition and post-composition, respectively.

**preassign** [*see also*: prescribe, give] Runge's theorem will now be used to prove that meromorphic functions can be constructed with arbitrarily preassigned poles.

**precede** [*see also*: above, foregoing, previous, prior] Let the notation be as in the preceding paragraph. [NOT "preceeding"] • The preceding observation, when looked at from a more general point of view, leads to..... • If $A = B$, how does the situation differ from the preceding one? • Indeed, by the preceding, we know that.....

**precise** [adjective, not verb; *see also*: accurate, rigorous, concrete, specific, very] We proceed to make this idea precise. [NOT "to precise this idea"] • This is made more precise by the following definition. • It is important that the orders of $F$ and $G$ are comparable, a statement made more precise by the following lemma. • To be precise, $A$ is only left-continuous at 0. • Put this way, the question is not precise enough. • Actually, the proof gives an even more precise conclusion:..... • The precise problem considered is the following:.....

**precisely** [*see also*: exactly, specifically] We do not exclude the possibility that $A$ consists of precisely the polynomials. • The resulting metric space consists precisely of the Lebesgue integrable functions, provided we identify any two that are equal almost everywhere. • Precisely $r$ of the intervals $A_i$ are closed. • Thus $A$ and $B$ are at distance precisely $d$. • We have $d(f, g) = 0$ precisely when $f = g$ a.e. • Important analytic differences appear when one writes down precisely what is meant by..... • More precisely, $f$ is just separately continuous.

**precision** This lends precision to an old assertion of Dini:..... • We do not intend to maintain this level of precision in all of our results. • [Do not write "We shall provide some precisions" if you mean *We shall provide some details.*]

**preclude** [*see also*: prevent, rule out] Here, continuity precludes the existence of singularities.

**predate** [*see also*: before] This bound, due to Dudley [D85], long predates Theorem 7 and has found widespread use.

**predict** It is impossible to predict the eventual outcome of the process. • The following example shows that the degree of smoothness predicted by Theorem 6 cannot be improved on. • The Ramanujan conjecture predicts that $a$ is an integer satisfying $|a| \leq g$. • Then $a \leq g^{3n}$, which is a refined version of what our heuristic predicts.

**predictable** We shall need ways of constructing new triangulations from old ones which alter the $f$-vector in a predictable fashion.

**prediction** In other words, the prediction is that for $d$ such that $w(d) = 1$, the probability that $r(A) \geq 2$ should be about $d^2$.

**prefer** [sth to sth] The reason for preferring (1) to (2) is simply that (1) is manifestly invariant. [Note the double *r* in *preferring.*] • However, we prefer to avoid this issue altogether by neglecting the contribution of $B$ to $S$.

**preferable** It seems preferable, for clarity's sake, not to present the construction at the outset in the greatest generality possible.

**preliminary** Following these preliminary remarks, we now state..... • We give the important preliminaries from descriptive set theory in Section 2.

**prelude** As a prelude to analyzing $S(G)$, we show how to decompose.....

**preparation** In preparation for proving Proposition 3 in §5, this section is devoted to understanding the $G$-structure of $M$.

**preparatory** Section 2 contains some specific preparatory material, notably a brief discussion of the category of virtual vector bundles.

**prepare** To prepare the ground for this deduction, we first modify Theorem 3 to accommodate [= take into account] sets which are relatively dense in a suitably pseudorandom set.

**prerequisite** The prerequisite for this book is a good course in advanced calculus.

**prescribe** [*see also*: preassign, give] The Taylor expansion of $f$ at 0 can be prescribed up to any finite order. • In fact, we can do even better, and prescribe finitely many derivatives at each point of $A$.

**presence** [*see also*: existence, possession] Unfortunately, because of the possible presence of 'cusps', this need not be true. • The main difference from the case of finite coding trees is the presence of limits. • The presence here of the direct summand $H$ is simply to prevent $A$ from having disconnected spectrum. • Unfortunately, the details of the calculations were omitted, and there is some doubt on whether the result is correct since our analysis suggests that $P_2$ must vanish to third order; the presence of $L^{-2}$ is also suspect. • Sarkar discussed multiple testing in the presence of positive dependence.

**present** **1** Note that any Euclidean space satisfies the present hypothesis. • The present paper owes a great debt to Strang's work. • At present, we merely show how this extremal problem can be used to characterize..... • This conjecture also appears intractable at present. • Inserting additional edges destroys no edges that were already present. • In the function field case the poles at $s = 0$ and 1 are still present. • Let $G$ be a uniformly random $r$-uniform hypergraph on $n$ fixed vertices (so that each hyperedge is present with probability 1/2).
**2** [*see also*: lay out, set out, exhibit, represent] Pointwise convergence presents a more delicate problem. • The analogue of Theorem 1 presents no difficulty. • Proposition 2 presents examples of..... • Here we present another homomorphism that is of type MN. • The argument is based in part on the following lemma which we present without proof. • To round out the picture presented by Theorem 5, we mention the following consequence of..... • Since most of the results presented are quite classical (the novelty lies in the arrangement, and some of the proofs are new), I have not attempted to document the source of every item.

**presentation** [*see also*: exposition] The author thanks the referee for his helpful suggestions concerning the presentation of this paper. • Our presentation is therefore organized in such a way that the analogies between the concepts of topological space and continuous function, on the one hand, and of measurable space and measurable function, on the other, are strongly emphasized. • We note that the assumption of GCH is made for convenience and ease of presentation. • With the exception noted below, we follow Stanley's presentation [3, Sec. 2].

**presently** [*see also*: now] For future reference, we record a more general form of the main result of Carl than is presently needed.

**preserve** [*see also*: keep, maintain] Is there any way to distinguish among the vertices of a finite graph in a way that is preserved by isomorphism and by taking induced subgraphs? • The properties of $A$ are preserved in the passage from $V$ to $C(V)$. • an orientation preserving homeomorphism • These are precisely the linear functionals which also preserve multiplication, i.e., $f(ab) = f(a)f(b)$. • Using duality, one can show that $B$ is preserved under swapping $v$ and $v^{-1}$.

**presumably** [*see also*: likely, possibly, probably] Presumably better results could be obtained by studying the obvious analogue of....., but for $l$ not prime this is poorly understood.

**presume** [*see also*: assume] We presume a basic knowledge of large cardinals and forcing.

**prevent** [*see also*: preclude, rule out, obstacle, obstruction] The local homeomorphism property of $F$ does not, however, prevent it from self-intersections. • The presence here of the direct summand $H$ is simply to prevent $A$ from having disconnected spectrum. • The difficulties that prevented us from proving Theorem A in [BG] are overcome here using two new ideas.

**previous** [*see also*: foregoing, above, prior, precede] in the previous chapter [= in the immediately preceding one] • in a previous chapter [= in an earlier chapter] • This is in agreement with our previous notation. • In this chapter we shall depart from the previous notation and use the letter $m$ not for Lebesgue measure, but for Lebesgue measure divided by $(2\pi)^{1/2}$. • Analysis of the proofs of these previous results shows that..... • We now apply the previous observation to estimate $F$. • The primary advance is to weaken the assumption that $H$ is $C^2$, used by previous authors, to the natural condition that $H$ is $C^1$.

**previously** [*see also*: above, before, hitherto] Here $Ff$ is the previously defined Fourier transform of $f$. • Our result extends previously known results for nilpotent groups. • In our next theorem, we state a characterization of..... which does not seem to have been noticed previously.

**price** [*see also*: cost, expense] We can make $g$ Lipschitz at the price of weakening condition (i). • This has the effect of making our theorems look less elegant than their counterparts in [KJ], but this seems to be the price to pay for complete generality.

**primarily** [*see also*: mainly, mostly, largely, part] The difference between these maps is primarily in their kneading sequences. • We are pleased to be able to offer this simple version of a technique which has hitherto been associated primarily with finite simple groups.

**primary** [*see also*: crucial, key, main, major, principal] Our primary quantity of interest is the following. • a matter of primary importance • the primary purpose

**prime** .....where the prime means that..... • ....., the prime denoting the omission of the zero term. • In general we will append a prime to objects if they refer to $[\ ]'$. • the set of all primes not exceeding $k$

**principal** [$\neq$ principle; *see also*: crucial, key, main, primary] Our principal tools in the proof are..... • The proof is similar to the proof of Theorem 4, with two principal modifications.

**principle** [$\neq$ principal] They established the Hasse principle subject to a rank condition on the coefficients. • This theorem will henceforth be referred to as the minimum principle. • The way we prove Theorem 1 is via the following general principle.

**prior** [*see also*: previous, precede] Indeed, to our knowledge, cardinality restrictions on Berg spaces have received no prior attention outside the metric context. • We shall shortly use this to construct explicit annihilators without prior knowledge of $f_n$.

**priority** With no parentheses, $\vee$ and $\wedge$ take priority over the group operation.

**private** Using a basis of this kind was suggested to us by Fox (private communication).

**probability** Define $a_k$ to be the probability that exactly $k$ out of the $2n$ values $X_i$ exceed $T$, conditional on $X_0 > T$. • Let $G$ be the random $r$-uniform hypergraph on $n$ vertices such that each hyperedge belongs to $G$ independently with probability $p$. • Orient the path in one of the two ways at random, with probability 1/2 each, and use the orientation to define the naturally associated ordering. • Each such cycle has probability $p^j$ to belong to $G$.

**probably** [*see also*: possibly, presumably, likely] There are probably many injective $E$-modules that are $p$-torsion for all $n$. • The following proposition is probably well known, but we do not have a reference.

**problem** [*see also*: complication, trouble, issue, subject, matter] The main problems that we address are..... • The basic problem of interest is to derive the asymptotics of the number $N_T(P,E)$ of circles in the packing $P$ which intersect a bounded set $E$ and have curvature $< T$. • The sort of problem which we are attacking has, on the face of it, nothing to do with differential algebra. [When first considered, it seems to be unrelated to differential algebra.] • The problem is to move all the discs to the third peg by moving only one at a time. • The problem one runs into, however, is that $f$ need not be..... • However, even for $k = 1$ the problem proved quite difficult. • However, we immediately encounter the problem of nonregularity of the data. • In the final section of the paper, we list some open problems. • We close this paper by offering some questions and problems for further research. • To overcome this problem, we revise our definition of a branch. • To circumvent this problem, we pass from consideration of $F(A)$ to consideration of $A$. • We can now pose a problem whose solution will afford an illustration of how (5) can be used. • The factor $Gf$ poses no problem because..... • Pointwise convergence presents a more delicate problem. • a central ⟨fundamental/immediate/intractable/long-standing/intricate/major/marginal/minor/pertinent/related/serious/subtle/underlying⟩ problem

**procedure** [*see also*: approach, method, technique, way, scheme] This procedure can be extended to take care of any number of terms. • This procedure, once implemented, can thereafter be applied with great effectiveness. • Our procedure will be to find..... • Repeating this procedure enough times gives the desired triangulation. • Hochberg pointed to the need for procedures that are more powerful than classical comparison methods.

**proceed** [*see also*: act, operate, continue, pursue, move] The proof proceeds along the same lines as the proof of Theorem 4. • It suffices to consider $G$, for which the proof proceeds much like that of Theorem 2. • The standard proofs proceed via the Cauchy formula. • We now proceed to matrix rings. • In Section 3 we proceed with the study of..... [= start or continue the study] • We shall proceed without making explicit distinctions between the two types of convergence. • We therefore proceed with some caution. • We start with a well-known lemma, and then proceed case-by-case depending on the subgroup $G$. • Proceeding further in this direction, we obtain the following corollary. • Proceeding as in the proof of....., let..... • Before proceeding we record an inequality for the size of an admissible $X$.

**process** [*see also*: course] Suppose that the process continues indefinitely. • Continuing this process, we get..... • This process can be repeated until we obtain the promised triangulation. • It is impossible to predict the eventual outcome of the process. • In the process of replacing each $A$ by a smaller set, we cannot make $B$ so small that $m(B) < 1$. • In Section 3 we obtain some results that we discovered in the process of trying to prove Theorem 2.

**produce** [*see also*: give, furnish, provide, present, yield] By induction, this process produces a sequence $(x_n)$ such that..... • This result shows that the mere existence of a nontrivial automorphism $j$ of $M$ produces the cut $I(j)$ of $M$ that satisfies (2). • The main new feature is the use of the face ring to produce lower bounds for the number of vertices. • Roughly speaking, we shall produce a synthesis of index theory with Fourier analysis. • This metric produces the usual topology of $X$. • Here, of course, the set $A$ produced is rather thin and certainly nowhere near the densities we are looking for.

**product** We can factor $g$ into a product of irreducible elements. • Note that the apparently [= seemingly] infinite product in the denominator is in fact finite. • Then $P$ is the product of several integer factors of about $x^n$ in size. • We need to check that $F$-derivatives behave in the way we expect with regard to sums, scalar multiples and products. • A different notation is used because the usual tensor product symbol is reserved for the tensor product of $A$-bimodules. • Then $B(E)$ is a unital Banach algebra with product the composition of operators.

**professor** In 1935 he was promoted to the rank of associate professor at Cornell. • He is currently Professor of Mathematics at Texas State University. • He spent six months as a visiting professor at Brown University.

**profound** [*see also*: great, deep] If nothing else, I hope to convince my readers that Segal's theorem deserves recognition as a profound contribution to Gaussian analysis. • This discovery had a profound effect on many areas of mathematics.

**profusion** [*see also*: abundance, abound, numerous, plentiful, variety] We now show that BL-algebras exist in great profusion.

**progress** [*see also*: improvement] **1** Recently, progress has been made in this case by Barnes (1999). • For nonarchimedean $v$ there has been significant progress, but a proof of the general local correspondence still seems a long way off. • work in progress • considerable ⟨encouraging/ remarkable/substantial/impressive/further⟩ progress
**2** In order to progress further, we shall also consider the problem.....

**project** **1** This is part of a larger project to study the Galois groups of periodic points of arbitrary polynomial maps.
**2** The measure $m$ must project onto $m_i$ under $P$.

**projection** It can be shown that the nearest point projection $p$ reduces length by a factor of $\cos\alpha$. • We see that the projection of $A$ to the first coordinate is all of $C$.

**promise** **1** We now fulfil the promise made at the start of the proof by handling the case of $G = S_n$.
**2** This process can be repeated until we obtain the promised triangulation.

**prompt** [*see also*: motivate] This choice was prompted by substantial numerical evidence. • This observation prompted the author to look for a more constructive solution.

**proof** [*see also*: evidence, verification, check] Here is a simple direct proof. • The others being obvious, only (iv) needs proof. • The major portion of one direction of the proof is contained in the previous proof. • The proof will only be indicated briefly. • We can assume that $p$ is as close to $q$ as is necessary for the following proof to work. • The proof follows very closely the proof of (2), except for the appearance of the factor $x^2$. • The proof proper [= The actual proof] will consist of establishing the following statements in sequence. • The standard proofs proceed via the Cauchy formula. • It suffices to consider $G$, for which the proof proceeds much like that of Theorem 2. • An ingenious alternative proof, shorter but still complicated, can be found in [MR]. • This proof is similar to the one offered here, but we wish to note that ours was conducted independently and posted on arXiv in 2016. • Kim announces that (by a tedious proof) the upper bound can be reduced to 10. • The following has an almost identical proof to that of Lemma 2. • A close inspection of the proof reveals that..... • This finishes ⟨completes⟩ the proof. • The method of proof carries over to domains satisfying..... • This sort of proof will recur frequently in what follows. • We end this section by stating without proof an analogue of..... • It seems reasonable to expect that....., but we have no proof of this. • a laborious ⟨complicated/elegant/routine/straightforward⟩ proof

**proper** The proof proper [= The actual proof] will consist of establishing the following statements in sequence.

**properly** [*see also*: strictly] Let $K$ and $L$ be quasivarieties such that $K$ is properly included in $L$.

**property** [*see also*: characteristic, feature] Let $f$ be a map with $f|M$ having the Mittag-Leffler property. • Then $F$ has the property that..... • the space of all functions with the property that..... • Now $F$ has the additional property of being convex. • We have to show that the property of there being $x$ and $y$ such that $x < y$ uniquely determines $P$ up to isomorphism. • The operators $A_n$ have still better smoothness properties. • Consequently, $F$ has the $\Delta_2$ property. [= $F$ has property $\Delta_2$] • Among all $X$ with fixed $L^2$ norm, the extremal properties are achieved by multiples of $U$. • However, not every ring enjoys the stronger property of being bounded. • On the other hand, as yet, we have not taken advantage of the basic property enjoyed by $S$: it is a simplex. • Certain other classes share this property. • This property is characteristic of holomorphic functions with..... • The structure of a Banach algebra is frequently reflected in the growth properties of its analytic semigroups. • It has some basic properties in common with another most important class of functions, namely, the continuous ones. • The space $X$ does not have ⟨fails to have⟩ the Radon-Nikodym property. • Only for very heavy-tailed data is this property violated. [Note the inversion.] • Of the four normed trialities, the one that gives the octonions has an interesting property that the rest lack.

**proportion** [*see also*: fraction, ratio, percentage] All sides were increased by the same proportion. • The proportion of $M$ with $h_M = 1$ is between 70% and 80%. • We show that nevertheless a positive proportion of the polynomials $B_n(x)$ satisfy Eisenstein's criterion. • The proportion of men to women in the population has changed in recent years. • The chart shows government spending expressed as a proportion of national income.

**propose** [*see also*: suggest] He was the first to propose a complete theory of triple intersections. • A model for analysing rank data obtained from several observers is proposed. • Unfortunately, the proposed model does not satisfy condition (5).

**proposition** It is this proposition that we believe to be false in Morava E-theory. • Here are some examples of Hrushovski classes of finite structures satisfying the hypothesis of the previous proposition:.....

**prove** [*see also*: show, establish, demonstrate, evidence, substantiate] The theorem to be proved is the following. [= which will be proved] • The uniqueness of $f$ is easily proved, since..... • If $n = 1$, there is nothing to prove. • However, this cannot be proved of the cardinal function $d(X)$. • Much to our surprise, even for $k = 1$ the problem proved quite difficult. • This result will prove extremely useful in Section 2. • The conjecture will be disproved by exhibiting.....

**provide** [*see also*: give, afford, furnish, offer, produce] Our last example was kindly provided by B. Johnson. • This itself does not produce a solution of (1), but an additional hypothesis such as the Palais-Smale condition does provide such a solution. • This provides an effective means for computing the index. • In addition to illustrating how our formulas work in practice, it provides a counterexample to Brown's conjecture. • The method falls short of providing an explicit formula for the index. • We then provide constructions to show that each of the cases listed can actually occur. • This will provide us with a way of getting some information about $M_E$ without relying on general theory. • The reason for our attention to these questions, beyond their intrinsic interest, is that, in certain circumstances, they provide a way to prove unique ergodicity results for groups.

**provided** [= providing; *see also*: if] This equation has a solution in integers provided that $N > 7$. • The resulting metric space consists precisely of the Lebesgue integrable functions, provided we identify any two that are equal almost everywhere. • The bound does not depend on $n$ or $m$, nor on $k$ provided the latter is chosen large enough.

**provisional** [*see also*: temporary, ad hoc] We make the following provisional definition, which is neither general nor particularly elegant, but is convenient for the induction which is to follow.

**publish** Only a few of those results have been published before. • These volumes bring together all of R. Bing's published mathematical papers.

**pull** [*see also*: link, combine] We now pull all the computations above together to get.....

**purely** Our choice of $Q$ for all this discussion has been purely for simplicity.

**purpose** [*see also*: aim, end, object, objective, intention] Let us now take a quick look at the class $N$, with the purpose of determining how much of Theorems 1 and 2 is true here. • For this purpose, we first define..... • For our purposes here, the best way is to base the proof on the following theorem, a derivation of which can be found in [P]. • To deduce Theorem 1 from Proposition 2, we use a result of Silberg, which we will rephrase slightly for our purposes. • The purpose of this paper is to expand substantially the class of maps for which the index can be computed. • A detailed exposition, more suited to the purposes of the present article, is given in [9]. • The motivation for the results of this section is the following result of John (paraphrased slightly to suit our purposes).

**pursue** [*see also*: proceed, go on, continue] We shall pursue our investigation of conservation laws in Section 5. • This question is pursued further in Section 3. • While we suspect that the methods of the present section can be brought to bear on this question also, we shall not pursue this analysis in detail here.

**push** This assumption enables us to push through the same arguments.

**put** [*see also*: insert, plug, set] Put a subset $U$ of $j(X)$ in $T$ if its inverse image under $j$ is an open subset of $X$. • Put a taxicab metric on $S_k$. • The map $F$ can be put into this form by setting..... • Put this way, the question is not precise enough. • This puts a completely different perspective on Fox's results. • This puts us in a position to apply Lemma 2 to deduce that..... • We put off discussing this problem to Section 5. • Putting these results together, we obtain the following general statement.....

## Q

**qualification** Also, we will take the qualification "for all sufficiently small $\varepsilon$" to be implicit in all of our statements below.

**quality** To assess the quality of this lower bound, we consider the following special case.

**quantify** [*see also*: measure] It quantifies the degree to which $T$ can be approximated by a sequence of increasingly fine nets $T_n$. • We quantify this property by means of a number $\gamma$, called the segment factor.

**quantitative** Theorem 7 imposes a quantitative restriction on the location of the zeros of.....

**quantity** Theorem 1 relates the quantity $a(n)$ to the quantity $b(n)$. • A natural question to ask is how the quantities $A(S,T)$ and $B(S,T)$ vary as $S$ and $T$ change. • The quantities $F$ and $G$ differ by an arbitrarily small amount. • Generally we add a tilde to distinguish between quantities associated with $\tilde{G}$ and those associated with $G$.

**question** [*see also*: problem, issue, matter, subject, topic] An obvious question to ask is whether Theorem 1 continues to hold for..... • A natural question is how sharp the bounds given in Theorem 6 are. • The question we shall be concerned with is whether or not $f$ is..... • The question naturally arises whether this representation is unique. • Here the interesting questions are not about individual examples, but about the asymptotic behaviour of the set of examples as one or another of the invariants (such as the genus) goes to infinity. • The question of whether $B$ is ever strictly larger than $A$ remains open. [OR The question whether] • Incidentally, the question of whether $K(E)$ is amenable for specific Banach spaces $E$ seems to have received almost no attention in the literature. • The question as to how often we should expect the class number to be divisible by $p$ is also of some interest. • Put this way, the question is not precise enough. • This question was answered negatively in [5]. • The two questions listed below remain unanswered. • As an application of Theorem A, in Section 2 we settle a question left unanswered in [3]. • This brings about the natural question of whether or not there is any topology on the set of all possible itineraries. • The lemma raises an interesting question:..... • This suggests a question: under what conditions is it true that..... ? • We close this paper by offering some questions and problems for further research. • It is generally a highly nontrivial question whether..... • When $A$ is commutative, the answer to both questions is 'yes'. • The continuum in question is then called arc-like.

**quickly** [*see also*: fast, rapidly] Hence $M(N)$ grows no more quickly than $k \log N$. • With $c = 4$, it is quickly seen that $R(q)$ decreases.

**quite** [*see also*: fairly, somewhat, rather] There is quite an extensive literature concerning resonance problems, beginning with the work of Lazer. • The two characteristics are connected, but the relationship is quite a complex one. • There are quite a number of cases, but they can be described reasonably systematically. • This is essentially implicit in [BC] but we cannot quite quote the result we need. • For binary strings, the algorithm does not do quite as well.

**quote** [= repeat exact words; *see also*: cite] We begin by describing the class of functions $f$ considered, which includes the special cases quoted above. • We quote for future reference another result of Fox: there exists..... • In Section 2 the reader will be reminded of some important properties of Bernoulli numbers, and some auxiliary results will be quoted or derived. • This is essentially implicit in [BC] but we cannot quite quote the result we need.

## R

**radius** [*pl.* radii] a ball of radius $r$ about the origin

**raise** [*see also*: increase] This raises the following question. [NOT "rises"] • In [K] we raised the question of recovering $X$ from $X_M$. • Raise both sides to the power $p$ to obtain..... • The maximum velocity was raised to $V$.

**random** The random variable $X$ has the Poisson distribution with mean $v$. • In this and the other theorems of this section, the $X_n$ are any independent random variables with a common distribution. • Let $T_1, \dots, T_r$ be i.i.d. uniform $[0,1]$ random variables conditioned to sum to 0 modulo 1. • To calculate (2), it helps to visualize the $S_n$ as the successive positions in a random walk. • The proof shows that if the points are drawn at random from the uniform distribution, most choices satisfy the required bound. • Choose $A \in M_n$ with entries bounded by $P$, uniformly at random. • Let $A$ and $B$ be its two parts, named in random order.

**range** **1** [*see also*: scope, extent, reach] Theorem 2 still holds for $A(x)$ provided that $k$ is restricted to the range $[0,1]$. • for $p$ in the range $1 < p < \infty$ • for $k$ in the indicated range • We also show the existence of $E$-transformations exhibiting nearly the full range of behaviours possible for scaling transformations.
**2** [*see also*: vary] .....where $h$ ranges over the set of elements having..... • The elements of $G$, numbering 122 in all, range from 9 to 2000.

**rank** a rank one operator [OR a rank-one operator, a rank-1 operator, an operator of rank 1] • an operator of finite rank = a finite rank operator [OR a finite-rank operator] • They established the Hasse principle subject to a rank condition on the coefficients.

**rapidly** [*see also*: fast, quickly] In the study of infinite series $\sum a_n$ it is of significance whether the $a_n$ approach zero rapidly. • a rapidly decreasing function

**rare** [*see also*: unusual] Conditions relating to bounds on the eigenvalues appear to be rare in the literature. • Indeed, as $n$ increases, it becomes increasingly rare for a manifold to be a hyperplane section of another projective manifold.

**rarely** While $C_p$ can be a Baire space, it rarely has the stronger completeness properties mentioned above. • Berg spaces have been rarely considered outside the metric context.

**rarity** We also need the following technical lemma, which asserts the rarity of numbers with an inordinately large number of prime factors.

**rate** These estimates only require that $f$ have a a certain polynomial rate of decay at infinity. • We give a fairly simple description of a wide class of averaging operators for which this rate of growth can be seen to be necessary. • Moreover, one has estimates on the rate at which this convergence is taking place. • Between 1929 and 1975 Australian income per person increased at an average annual rate of 0.96%. • the growth rate of $V^n$ as $n \to \infty$

**rather** [*see also*: fairly, somewhat, quite, instead] However, $F$ is only nonnegative rather than strictly positive, as one may have expected. • In fact, we shall prove our result under the weaker hypothesis that $W$ is weakly bounded, rather than just bounded, on an infinite subset of $G$. • The definition is stated in terms of local martingales, rather than martingales, for the technical reason that the former are easier to characterize in applications. • It seems that the relations between these concepts emerge most clearly when the setting is quite abstract, and this (rather than a desire for mere generality) motivates our approach to the subject. • Rather than working directly with $V(s)$, we shall instead consider the following two general integrals:..... [OR Rather than work] • Rather than discuss this in full generality, let us look at a particular situation of this kind. • The proof is rather cumbersome. • This may appear rather wasteful, especially when $n$ is close to $m$, but these terms only give a small contribution to our sum. • For explicit solutions, it may be necessary to have rather precise information about the amplitude $\phi$. • We first prove the (rather simpler) Theorem 7, by effecting a quite general reduction of the problem to the study of certain isotropy factors. • A further complication arises from 'BP', which works rather differently from the other labels.

**ratio** [*see also*: proportion] The female/male ratio in the sample was 19 to 1. • the ratio of $P$ to $Q$ • the ratio between Haar measures on $G$ and $H$ • in the ratio of approximately $3 : 1$

**reach** [*see also*: intractable] **1** We would like to know..... but that is beyond our reach at this point. • It seems that the solution of Problem 1 is still out of reach.
**2** [*see also*: achieve, attain, arrive at] The point $A$ can be reached from $B$ by moving along an edge of $G$. • For example, $F$ reaches a relative maximum of 5.2 at about $x = 2.1$. • The iterates eventually reach the value 1. • This simple device allows us to reach the same conclusion as in the $q$-convex case.

**read** Equation (2) now reads $Ax =$ [NOT "reads as"] • The author thanks H. Miller for a careful reading of an earlier draft. • The string $N$ (read from right to left) starts with..... • Then $G$ is simply $g$ with its periodic string read backwards. • This can be read off from (8). • We are also grateful to the anonymous referee for carefully reading the paper and making useful suggestions. • We do this in the first section, which the reader may skip on a first reading.

**readability** We have made modifications in the interest of readability.

**readable** A very readable account of the theory has been given by Zagier [3].

**reader** We leave the details to the reader. • We leave it to the reader to verify that..... [Note that the *it* is necessary here.] • For more details we refer the reader to [4]. • If nothing else, I hope to convince my readers that Segal's theorem deserves recognition as a profound contribution to Gaussian analysis. • It may be worth reminding the reader that..... • The reader is cautioned that our notation is in conflict with that of [3]. • The reader is assumed to be familiar with elementary $K$-theory. • The interested reader is referred to [4] for further information. [Note the double $r$ in *referred*.] • At this point, the reader is urged to review the definitions of..... • The reader might want to compare this remark with [2, Cor. 3]. • For the convenience of the reader, we repeat the main points. [OR For the reader's convenience]

**readily** [= without difficulty] We have shown that....., whence it is readily inferred that..... • One of the appealing aspects of the spectral set $\gamma$ is that it readily lends itself to explicit computation.

**ready** [*see also*: position] We are now ready to proceed to the final stage of our construction.

**realizable** We first show that the first three cases of Theorem 3 are realizable by rotations of $S^3$.

**realization** The link between differential equations and homotopy groups first came about as a result of the realization that ellipticity of a differential operator can be defined in terms of its symbol.

**realize** [*see also*: know, recognize, understand, grasp, aware] The theorem gains in interest if we realize that..... • This has deeper significance than one might first realize. • The geodesics (8) are the only ones that realize the distance between their endpoints. • In the remainder of this section, we study some properties of $K$, with the eventual aim (not realized yet) of describing $K$ directly using $G$.

**really** [*see also*: actually, fact] We did not really have to use the existence of $T$. • Of course, it is tacitly understood that it is this measure that is really under discussion. • Each $x$ here really designates the pair $(x, Ax)$. • The next result is really a repackaging of the main result of Cowling [6], and is used extensively through the rest of this note. [= throughout]

**rearrange** Rearranging terms we obtain the inequality.....

**rearrangement** The obvious rearrangement reveals the right side to be identical with (8).

**reason** **1** [*see also*: explain, justify, ground] This argument is invalid for several reasons. • It is for this reason that his argument is incorrect. [NOT "by this reason"] • The definition is stated in terms of local martingales, rather than martingales, for the technical reason that the former are easier to characterize in applications. • For reasons to be explained later, this space is known as the space of spinors. • Assuming for a moment that this spectral sequence exists, it degenerates for dimension reasons. • This is the reason for calling $f$ the derivative of $g$. • One reason for using this rather elaborate model is that it permits a simple and concrete definition of the realization. • A drawback to Pólya trees, and perhaps the main reason why they have not seen much application within the Bayesian nonparametric literature, is that an arbitrary partition tree needs to be specified. • The reason that this is significant is that..... • Indeed, there is reason to suspect that difficulties could increase with increasing $n$. • There is no reason to expect this to be an inverse map on $K$, but we do have the following.
**2** [*see also*: argue, proceed] To see this, we reason as follows. • The simplest way is to reason by induction on $n$.

**reasonable** [*see also*: mild, moderate] It is therefore reasonable that the behaviour of $p$ should in some rough sense approximate the behaviour of $q$. • Thus it is reasonable to attempt, using this homeomorphism, to gain an understanding of the structure of $M$. • It seems reasonable to expect that....., but we have no proof of this. • If the boundary is never hit then $x_t$ is a Feller process under reasonable continuity assumptions. • The fact that such a bias has been observed experimentally is further evidence that the methodology of basing conclusions on the distribution of $P$ is reasonable.

**reasonably** [*see also*: fairly] Our asymptotic results compare reasonably well with the numerical results reported in [8]. • There are quite a number of cases, but they can be described reasonably systematically.

**reasoning** [*see also*: argument] By the same kind of reasoning it suffices to consider..... • Our method of proof will be an adaptation of the reasoning used on pp. 71–72 of [3]. • The same line of reasoning applies in the continuous time setting. • We could have adopted an approach to proving Theorem 2 along a line of reasoning which bears greater resemblance to the treatment of the analogous result in Section 1. • To recover Wiener's famous result that Brownian paths are continuous, one needs to use more sophisticated reasoning.

**reassemble** [= put together again] The diagram of $L+M$ is obtained by taking the rows of the diagrams of $L$ and $M$ and reassembling them in order of decreasing length.

**recall** [*see also*: remind, remember] We recall what this means. [NOT "We remind"] • Recall the definition of $T$ from Section 3.

**receive** [*see also*: get, obtain] He received his master and Ph.D. degrees from the University of Texas. • Incidentally, the question of whether $K(E)$ is amenable for specific Banach spaces $E$ seems to have received almost no attention in the literature. • Indeed, to our knowledge, cardinality restrictions on Berg spaces have received no prior attention outside the metric context. • There exists a solution $x \in S^s$ whose coordinates all receive the same colour.

**recent** For a recent account we refer to [4]. • However, the connection with Gromov's work has been obscured in recent years by an emphasis (in the algebraic topology literature) on configuration spaces.

**recently** This subject has recently been extensively studied. • There has recently been increasing interest in the theory of..... • The author's interest in this problem was recently rekindled by a conversation with David Lees. • This method is recently less and less used. • There are, however, a few important papers of which we were unaware until fairly recently. • Very recently, Heck introduced a general approach that unifies and extends all these results.

**recognition** The name of Harald Bohr is attached to $bG$ in recognition of his work on almost periodic functions. • If nothing else, I hope to convince my readers that Segal's theorem deserves recognition as a profound contribution to Gaussian analysis.

**recognize** [*see also*: identify, know, find, establish, realize] It is important to recognize that there is a significant subclass of vector fields for which the ambiguity alluded to above disappears. • Famously, Brown and Fox [4] recognized that this group is non-Hopfian. • It is obvious that the above theorem supplies an algorithm to effectively recognize whether $SP$ is in $A$. • Because N. Wiener is recognized as the first to have constructed such a measure, the measure is often called the Wiener measure. • a method for recognizing pure injective modules

**recommend** [*see also*: suggest] The author thanks the referee for recommending various improvements in exposition. • We strongly recommend [MS] for a very thorough treatment of twists of abelian varieties.

**record** Before proceeding we record an inequality for the size of an admissible $X$. • For later use, we record the following formulas:..... • For future reference, we record this in the following corollary. • Standard Banach space notation is used throughout. For clarity, however, we record the notation that is used most heavily.

**recourse** [*see also*: appeal, invoke, refer] Let us now prove directly (without recourse to [5]) that..... • This case can in fact be treated without recourse to the methods of that paper. •

**recover** [*see also*: retrieve] If we know a covering space $E$ of $X$ then not only do we know that....., but we can also recover $X$ (up to homeomorphism) as $E/G$. • Thus $F$ can be recovered from $X^kF$ by $k$-fold integration. • Replacing $f$ by $\log f$, we recover the theorem of [6]. • This is nearly the same as formula (6) of [7], which we can recover by multiplying (2.3) by $F(s)$. • To recover Wiener's famous result that Brownian paths are continuous, one needs to use more sophisticated reasoning.

**recur** This sort of proof will recur frequently in what follows.

**rederive** The inequality (2.4) is essentially contained in [LS] but will be rederived in Corollary 5 below.

**rediscover** This theorem was proved by Kohn some 40 years before it was rediscovered by Birkhoff, after whom it was named.

**reduce** [*see also*: decrease, diminish, lower, cut down] We claim that, by setting $w$ to zero on this interval, the value of $F(w)$ is reduced. • The effect of Theorem 3 is to reduce the number of variables in the argument by 1. • Kim announces that (by a tedious proof) the upper bound can be reduced to 10. • The length of $F$ is thus reduced by half. • It can be shown that the nearest point projection $p$ reduces length by a factor of $\cos\alpha$. • By induction, we are reduced to proving the following lemma. • Thus we are reduced to the purely algebraic problem of determining..... • The problem now reduces to establishing that..... • We emphasize, however, that $\|\cdot\|$ is *not* the Euclidean norm, so that the present setting does not reduce to the Euclidean setting considered previously. • The same trick reduces matters to studying the functions $f_i$. • We first prove a reduced form of the theorem.

**reduction** A small percentage reduction in the cost of materials resulted in a significant increase in profit. • We first prove the (rather simpler) Theorem 7, by effecting a quite general reduction of the problem to the study of certain isotropy factors.

**redundant** [*see also*: superfluous, unnecessary, drop, omit] Note that no boundedness assumption is made in this definition; in fact, this would be redundant as shown by Theorem 3 below.

**refer** [*see also*: mention, allude, touch, appeal, invoke] For more details we refer [= direct] the reader to [4]. • We refer the reader to the body of the paper for details. • The interested reader is referred to [4] for further information. [Note the double *r* in *referred.*] • For the one-dimensional case one is referred to [1, 14, 24] and references therein. • For a comprehensive treatment and for references to the extensive literature on the subject one may refer to [= consult] the book [M] by Markov. • To be precise, refer to the notation in Theorem 1 and define..... • In the physical context already referred to, $K$ is the density of..... • We refer to these as homogeneous Sobolev spaces. • We shall also refer to a point as backward nonsingular, with the obvious analogous meaning. • In the following, all topological notions refer to the weak topology of $Y$.

**referee** **1** The author thanks the referee for his/her helpful suggestions concerning the presentation of this paper. • The author thanks the referee for recommending various improvements in exposition. • We are grateful to the referee for a number of helpful suggestions for improvement in the article. • We are also grateful to the anonymous referee for carefully reading the paper and making useful suggestions. • The referee deserves thanks for careful reading and many useful comments. • At the suggestion of the referee, we consider some simple cases.

**2** While the first version of this article was being refereed, I found that Zhang [2] had given a similar treatment of $E_n(X)$.

**reference** Let us note (for later reference) that..... • We quote for future reference another result of Fox: there exists..... • It will be convenient to state beforehand, for easy reference, the following variant of..... • We have thus proved the theorem without any reference to integration. • If $G$ is clear from context, then we suppress reference to it in the notation. • The best general reference ⟨An excellent recent reference⟩ for this issue is [5]. • The first theorem is well known, but we give a proof for lack of a reference. • At the time of writing [5], I was not aware of this reference. • Where it is possible, we outline the proofs so that the reader will not have to hunt for obscure references. • For a comprehensive treatment and for references to the extensive literature on the subject one may refer to the book [M] by Markov. • (see [2] and references therein)

**refine** [*see also*: improve, sharpen, strengthen, progress, sophisticated] In that case, we may refine Lemma 3 to the following more precise statement. • Slightly refining a result of [8], Davenport proved..... • a succession of more and more refined discrete models

**refinement** [*see also*: improvement, strengthen] For later use, we prove a mild refinement of this latter characterization. • We conjecture that in the general case refinements of the above ideas will essentially still work to give similar results.

**reflect** [*see also*: represent, reveal, show, indicate] The structure of a Banach algebra is frequently reflected in the growth properties of its analytic semigroups. • Strictly speaking, we should write something like $a(l, m, n)$ to reflect the dependence; we shall rely upon context instead. • In particular, integral curves evolve continuously, and we should seek to represent them using a measure which reflects this continuity in some way. • If $s_0$ lies below $R_{-2}$, then we can reflect about the real axis and appeal to the case just considered. • Figures 2 and 3 are unchanged by reflecting about the vertical axis.

**reflection** A little reflection on the definitions makes it clear that..... • The Euclidean group, which consists of all isometries of Euclidean space, is generated by reflections in affine hyperplanes. • Reflection across a line through the origin in two dimensions can be described by the following formula:..... • up to translation and reflection in the origin

**reformulate** [*see also*: rephrase, restate, rewrite] This can be easily reformulated in purely geometric terms.

**reformulation** A similar reformulation can be made for.....

**refute** [= prove that sth is incorrect] However, this argument can be easily refuted by showing that.....

**regard** **1** [*see also*: respect] We need to check that $F$-derivatives behave in the way we expect with regard to sums, scalar multiples and products. • See Section 3 in this regard. • Such sets appear to have a number of interesting properties in regard to the partition regularity of homogeneous systems.

**2** [*see also*: consider, concern, view] We can regard (8) as an equation for $\mu$. • Regarded as the intersection of two quadrics, $E$ represents..... • We also discuss some intriguing open questions regarding triply periodic surfaces. • Regarding (8) [= Concerning (8)], we have.....

**regardless** [of sth; *see also*: irrespective] This works regardless of whether $B$ is true or false. • Their result gives no information when $k$ is large, whereas (5) is significant regardless of the size of $k$.

**relabel** [*see also*: rename, label] Next we relabel the collection $\{A_n, B_n\}$ as $\{C_n\}$. • Then we can find a subsequence (not relabelled) such that $a_n < 1$ for all $n$.

**relate** [to sth; *see also*: concern, connect, link, tie, associate] We describe how the notion of positivity relates to the other properties. • Conditions relating to bounds on the eigenvalues appear to be rare in the literature. • Theorem 1 relates the quantity $a(n)$ to the quantity $b(n)$. [NOT "with the quantity $b(n)$"] • There are numerous results in the literature relating spectral conditions to invertibility of $f$. • The following proposition relates the two definitions. • There is a related result concerning primitivity. • We first replace $a(n)$ by the related and simpler function $b(n)$, where..... • Our results are closely related to those of Strang [5]. • The above-mentioned measure is of course intimately related to the geometry of the real line. • How are these two optimality notions related? In general, they are not. • We define three base-related measures that arise naturally in this context. • These two approaches seem completely unrelated to ours.

**relation** [of sth to sth; between sth; *see also*: connection, link, relationship] But there is a much more important relation between equivalent regions:..... • By carefully examining the relations between the quantities $U_i$, we see that..... • There is a fourth notion of phantom map which bears the same relation to the third definition as the first does to the second. • What relation exists between $f$ and $g$?

**relationship** [*see also*: connection, link, relation] On the way we analyze the relationship between..... • The two characteristics are connected, but the relationship is quite a complex one. • The aim of this article is to study the relationship between the size of $A$, as measured by its diameter, and the extent to which $A$ fails to be convex. • In this paper we wish to renew an interest in the systematic study of the relationships between cardinal invariants with respect to Borel morphisms.

**relative** [*see also*: respect, compare] Then $P$ is said to be elliptic relative to the action of $G$ if..... [NOT "relatively to"] • Then $G$ is a subgroup of $R$ (relative to addition). • The pull-back of $F$ is homotopic to $G$ relative to the end-points. • the complement of $A$ relative to $B$ • Here $A$ is small relative to $B$. [= in comparison with $B$]

**relatively** [= to a certain degree; *see also*: relative] By relatively straightforward means one can show that..... • [Do not write "the complement of $A$ relatively to $B$" if you mean *the complement of $A$ relative to $B$*.]

**relax** [*see also*: weaken] The idea is to relax the constraint of being a weight function in Theorem 3. • The assumption that the test statistics are identically distributed can be relaxed without much difficulty.

**relevance** [*see also*: role, importance, significance] What is the relevance of this example to Fatou's lemma? • To understand the relevance of locality, note that it implies that..... • It is appropriate to highlight McCann's contribution whose 1994 thesis disclosed the relevance of convex gradients to geometric inequalities.

**relevant** [to sth; *see also*: pertinent, connect, concern, pertain] We now turn to a brief discussion of another concept which is relevant to John's theorem. • Hence, all the subgroups $\Gamma$ relevant to us have $-I \notin P_\Gamma$. • This comment is relevant in proving Theorem 1. • This formula makes it apparent that only the values $u(d)$ for positive $d$ are relevant. • For a list of relevant references, see [2]. [= references connected with the subject being considered] • For relevant background material concerning random walks, see [2]. • In Section 2, we review the relevant algebraic background from bordered Floer homology.

**reliance** [*see also*: dependence] The proof is self-contained, without reliance on a computer-algebra system.

**rely** [*see also*: base, depend] The proof is not direct, but relies on the results of [2]. • We underline that the aforementioned results in [1] all rely on the conformality of the underlying construction. • This will provide us with a way of getting some information about $M$ without relying on general theory. • Strictly speaking, we should write something like $a(l, m, n)$ to reflect the dependence; we shall rely upon context instead.

**remain** [*see also*: stay, keep, continue, persist] Conjecture 2 of [KH], to the effect that [= meaning that] there is no relation $P$ with $E(P) = 1$, still remains open. • The case where $p > 1$ remains unresolved. • For $k = 2$ the count remains as is. • The two probabilities remain essentially what they were before. • The situations with domains other than sectors remain to be investigated. • It remains to exclude the case where..... • To prove (8), it only remains to verify that..... • Thus, all that remains is to repeat the construction for $f$ in place of $g$. • There remains the second question. [BUT It remains to consider the second question.] • It is possible that the methods of this paper could be used to....., but there remain considerable obstacles to overcome. • Let $S_i$ be the first of the remaining $S_j$. • Half of the sets of the family $R$ miss $i$ and half the remaining miss $j$. • The remaining possibility is that $v$ is labelled 2.

**remainder** [*see also*: rest] The remainder of our work breaks into five steps. • In the remainder of this section we shall be trying to answer the question:..... • The map $f$ is fixed for the remainder of the proof.

**remark** **1** [*see also*: observation] However, the ambiguity alluded to in Remark 3 disappears when talking about an affine field. • The reader might want to compare this remark with [2, Cor. 3]. • First, some remarks concerning the term 'closure' are in order. • This is no coincidence, in the light of the remarks preceding Definition 2. • Following these preliminary remarks, we now state.....
**2** [*see also*: note, observe, comment] It is perhaps worth remarking that..... • We remark at the outset that this formula makes sense, because..... • However, this argument is fallacious, because as remarked after Lemma 3,.....

**remarkable** [*see also*: unusual] Their remarkable achievement seemed to validate John's claim. However, it soon turned out that..... • The remarkable feature of this theorem is that..... • Theorem 3 is remarkable in that considerably fewer conditions than in the previous theorems ensure universality.

**remarkably** In this paper we apply combinatorial group theory (sometimes in a remarkably elementary way) to prove a number of results in this direction.

**remedy** **1** In this case we need to take into account the difficulty with fitting a ball into a sector. The obvious remedy is to replace the ball by a suitable disc.
**2** To remedy this, we pass to a subgroup of finite index that is special.

**remember** [*see also*: recall, reminiscent, mind] To understand why, let us remember that..... • Theorem 3 may be interpreted as saying that $A = B$, but it must then be remembered that.....

**remind** [sb that sth; sb of sth; *see also*: recall] It may be worth reminding the reader that..... [NOT "reminding that"] • The purpose of this section is to remind the reader of some of the results on the structure of..... • In Section 2 the reader will be reminded of some important properties of Bernoulli numbers, and some auxiliary results will be quoted or derived.

**reminiscent** [of sth; *see also*: similar] It has properties reminiscent of partition functions. • Away from critical points, the action of $G$ is reminiscent of the action of a cyclic group of order $d$.

**removal** Likewise, if $A$ does not span $C(I)$, removal of any of its elements will diminish the span.

**remove** [*see also*: delete, drop, omit, dispense with] This theorem removes the restriction to convex regions which was imposed in Theorem 8. • The theorem implies that some finite subcollection of the $f_i$ can be removed without altering the span. • Let $D$ be the plane with three disjoint discs removed.

**rename** [*see also*: relabel] Then we can find a subsequence (not renamed) such that $a_n < 1$ for all $n$.

**renew** In this paper we wish to renew an interest in the systematic study of the relationships between cardinal invariants with respect to Borel morphisms.

**renewal** This article features results in both spectral theory and operator ergodic theory made possible by a recent renewal of interest in the consequences of James's inequalities.

**repeat** Thus, all that remains is to repeat the construction for $f$ in place of $g$. • Repeating this procedure enough times gives the desired triangulation. • Note that some of the $a_n$ may be repeated, in which case $B$ has multiple zeros at those points. • This process can be repeated until we obtain the promised triangulation. • By repeated squaring to eliminate the radicals in this equality, we obtain.....

**repeatedly** [*see also*: frequently, often] This property will be used repeatedly hereafter.

**repetition** To avoid undue repetition in the statements of our theorems, we adopt the following convention. • The proof is essentially a repetition of the arguments used to prove.....

**rephrase** [*see also*: reformulate, restate, rewrite] As usual, we can rephrase the above result as a uniqueness theorem. • To deduce Theorem 1 from Proposition 2, we use a result of Silberg, which we will rephrase slightly for our purposes. • Rephrased in the language of [HT], Proposition 2 says that..... • A rephrasing of the definition is that.....

**replace** [by/with sth; *see also*: change, place, instead, supersede] We now construct $f$ as in the proof of Theorem 5, with $V$ replaced by $W$. • A similar result holds with 'compact' replacing 'convex'. • The statement of Theorem 5 remains valid if we replace '$f$ is compact' by 'the norm of $f$ is bounded'. • We must have $Lf = 0$, for otherwise we can replace $f$ by $f - Lf$. • Anderson's theorem replaces the restriction that $f$ is concave with a much weaker condition, but requires in exchange the symmetry of $K$.

**replacement** Then $F$ satisfies the following replacement for condition (e). • Replacement of $z$ by $1/z$ transforms (4) into (5). • We produce an evolution equation which differs from (2.3) only in the replacement of the $F^2$ term by $F^3$.

**report** Our asymptotic results compare reasonably well with the numerical results reported in [8].

**represent** [*see also*: present, reflect, picture, account] We can represent $W$ by the integral..... • We represent $A$ as a quotient space of $X$ by sending the point..... to..... [NOT "We present"] • It turns out that $A$, $B$ and $C$ all belong to the same class, which we represent by the symbol $P_2$. • In particular, integral curves evolve continuously, and we should seek to represent them using a measure which reflects this continuity in some way. • We shall use the symbol $\cap$ to represent intersection. • We use upper case letters to represent inverses of generators. • This accords with the intuition that as we pass down the coding tree, we find out more and more detailed information about the ordering actually represented. • We shall then show that this $f$ can be represented in the form (5).

**representative** a complete set of representatives of the isomorphism classes of $A$-modules

**request** The above argument was supplied by A. Lumar at our request.

**require** [*see also*: call for, entail, demand, want, desire, necessitate, force, involve, requisite] In addition to $f$ being convex, we require that $F$ be holomorphic. [Note the subjunctive *be*.] • This is equivalent to requiring that..... • When clarity requires it, we shall write $I_A(f)$ instead of $I(f)$. [Note that the *it* is necessary here.] • Many of the results that follow only require $W$ to satisfy (8). • Lemma 3 does not require $D$ to be prime. • The only point that requires care is the verification of..... • The projection technique requires the introduction of an appropriate homomorphism. • We require a method of dividing $z$ into subwords $z_i$ for which we know the structure of $f(z_i)$. • This requires us to give $M$ an $R$-module structure. • Then $f = 1$, as required ⟨claimed/desired⟩. • If (ii) is required for finite unions only, then $M$ is called an algebra of sets. • The above definition was first given in [D]; care is required because this term has been used in a slightly different sense elsewhere. • We shall show that $V$ is the required open cover. • The algebraic properties (i) and (ii) required of $j$ are evidently true. • Here the functional-analytic tools required are simpler, but this easier setting allows us to develop some methods without undue worry about technicalities.

**requirement** [*see also*: condition, demand, stipulation] The conclusion of Theorem 3 becomes false if this requirement is omitted. • We next show how the continuity requirement on $f$ in Theorem 2 can be weakened. • In less precise language, the requirement is that the two angles are the same in size and in orientation. • The remaining requirements of Definition 3 are also easily seen to hold in $L^1$. • The other requirements for a type $F$ map are also met. • Thus $W$ satisfies two of the four requirements for membership in $Z$. • the main ⟨key/essential/detailed/precise/reasonable/minimum/further/specific⟩ requirement

**requisite** [= necessary for a particular purpose; *see also*: require] In order to prove the opposite inequality, we first construct the requisite number of balanced spheres of type A.

**research** [*see also*: investigation, study] Research partially supported by NSF Grant No. 23456. • This research was initiated when the first author was visiting the University of Alberta in the summer of 2008; the financial support and kind hospitality are gratefully acknowledged. • A survey of the research on $f_n(x, y)$ up to 1970 (most of it dealing with the case $n = 1$) was given in [3]. • This is an interesting area for future research. • This work continues research begun in [5]. • In the present work we continue this line of research. • We close this paper by offering some questions and problems for further research. • detailed ⟨in-depth/extensive/pioneering/ground-breaking/thorough⟩ research

**researcher** Some researchers have also tried investigating the growth rate of $s_n$ numerically.

**resemblance** [*see also*: similarity] Note the resemblance to our strong ($p$)-property. • We could have adopted an approach to proving Theorem 2 along a line of reasoning which bears greater resemblance to the treatment of the analogous result in Section 1. • All three cases bear a striking resemblance. •

**resemble** [*see also*: like, similar] Littlewood proved that certain subharmonic functions on the unit disc resemble bounded analytic functions in having radial limits almost everywhere. • While topological measures resemble Borel measures, they in general need not be subadditive.

**reserve** The letter $\chi$ will be reserved for characteristic functions throughout this book. • A different notation is used because the usual tensor product symbol is reserved for the tensor product of $A$-bimodules.

**resistant** On the other hand, the second case appears to be resistant to the methods we use to prove Lemma 2.

**resolve** [*see also*: solve] However, to our knowledge this is not fully resolved. • This also resolves the ambiguity introduced earlier in choosing an order of the lifts of $U$. • A recent breakthrough of Moreira [M] resolves a longstanding conjecture of Hindman H], proving partition regularity of the equation $x + y^2 = yz$. • The case where $p > 1$ remains unresolved.

**respect** [*see also*: regard, relative, compare] The set $S$ is a semigroup with respect to coordinatewise addition. • Thus $C$ behaves covariantly with respect to maps of both $X$ and $G$. • Suppose $A$ is maximal with respect to having connected preimage. • We denote the complement of $A$ by $A^c$ whenever it is clear from the context with respect to which larger set the complement is taken. • Now suppose that $F(n) = x$ and that $n$ is maximal in this respect. • The prime 2 is anomalous in this respect, in that the only edge from 2 passes through 3. • It is in all respects similar to matrix multiplication. • In the course of writing this paper we learned that P. Fox has simultaneously obtained results similar to ours in certain respects. • Keller [2, Theorem 5] obtains a duality theorem that is stronger than Theorem 2 in a number of respects, but the proof is much more difficult. • Identical conclusions hold in respect of the condition BN. [= concerning BN]

**respective** [= relating separately to the individual objects just mentioned, in the same order; *see also*: correspond] Let $x_1, \dots, x_n$ be the distinct values assumed by $f$ and $A_1, \dots, A_n$ the respective sets where these values are assumed. • Differentiation of (5) and (6) gives the respective equations $A = B$ and $C = D$.

**respectively** Let $x_1$, $x_2$ be variable points in the intervals $(a, b)$, $(c, d)$ respectively. • The subspaces of $M(\Omega)$ consisting of the *discrete* and *continuous* measures are $M_d(\Omega)$ and $M_c(\Omega)$, respectively. • We call $E_x$ and $E^y$ the $x$-section and $y$-section respectively of $E$. • These might be called respectively the regular and the singular parts of $B$.

**responsible** Such a bimodule can equivalently be viewed as a $DA$ bimodule over $(A^{op}, A'^{op})$; this perspective is responsible for the reversal of order in the sequences above.

**rest** **1** [*see also*: remainder] $F = 1$ on the rest of $A$. • Each row of $A$ has a single $\pm 1$ and the rest of the entries 0. • The rest of the proof runs as before. • Much of the rest of the paper is devoted to a general study of.....
**2** [*see also*: base, depend, rely] This rests on a result of Kummer.

**restate** [*see also*: reformulate, rephrase, rewrite] Thus the conjecture can be restated as follows.

**restraint** [*see also*: constraint, restriction] A computational restraint is the algebraic number theory involved in finding these ranks, which will typically be more demanding than in our example of Section 1.

**restrict** [*see also*: confine, limit] It is not generally possible to restrict $f$ to the class $D$. • Then $F$ restricts to a $C^0$ flow on $M$. • Theorem 2 still holds for $A(x)$ provided that $k$ is restricted to the range $[0, 1]$. • If we keep $x$ away from $\partial D$ by restricting it to a compact set $K \subset D$, then..... • The supremum in (1) does not change if we restrict ourselves to rational points in $Q$. • We shall restrict the discussion to plane regions.

**restriction** [*see also*: constraint, limitation, restraint] Theorem 7 imposes a quantitative restriction on the location of the zeros of..... • However, if $B$ were omitted in (1), the case $n = 0$ would imply $Nf = 1$, an undesirable restriction. • Some restrictions must be placed on the behaviour of $f$. • When $A$ is the order complex of a poset, there are further restrictions on the $h$-vector of $A$. • This theorem removes the restriction to convex regions which was imposed in Theorem 8. • All our estimates hold without this restriction. • The location of the zeros of a holomorphic function in a region $\Omega$ is subject to no restriction except the obvious one concerning the absence of limit points in $\Omega$.

**restrictive** [*see also*: stringent] The usual definition is more restrictive in that it requires that $a \in A$.

**result** **1** [*see also*: consequence, effect, outcome, achievement, entail] Let $n \to \infty$, applying Lemma 5. The result is..... • As a result, $B$ is isomorphic to $C$. • As usual, we can rephrase the above result as a uniqueness theorem. • Slightly refining a result of [8], Davenport proved..... • The method of proof of Theorem B can be adapted to extend the right-to-left direction of Mostowski's result by showing that..... • We now prove a simple fact about semigroups; it is surely a folklore result. • It is hoped that a deeper understanding of these residues will help establish new results about the distribution of modular symbols. • We could have adopted an approach to proving Theorem 2 along a line of reasoning which bears greater resemblance to the treatment of the analogous result in Section 1. • In the course of writing this paper we learned that P. Fox has simultaneously obtained results similar to ours in certain respects. • There is a related result concerning primitivity. • The results have been encouraging enough to merit further investigation. • We show that one can drop an important hypothesis of the saddle point theorem without affecting the result. • This rests on a result of Kummer.

**2** [*see also*: cause] The resulting formula exhibits $u$ as the Laplace transform of $x$. [NOT "The obtained formula"] • We can solve the resulting equations successively for $c_1, ..., c_n$. • Their study resulted in proving the conjecture for $k = 1$. • The demand that each entry be a perfect square results in nine equations. [Note the subjunctive *be*.] • Less than 1 in $p$ of its points will result in a quartic with ideal class number $p$. • Lebesgue discovered that a satisfactory theory of integration results if the sets $E_i$ are allowed to belong to a larger class of subsets of the line. • [Do not write "It results that" if you mean *It follows that.*] • This results from a straightforward modification of Adams's [1] result (see [5] for an exposition of Adams's construction and details of the said modification).

**resume** [= begin again after stopping; ≠ summarize] We now resume our discussion of the different cases.

**retain** [*see also*: keep, maintain, preserve] This extension retains control on..... at the sacrifice of loosing some control on..... • The lemma shows that properties of certain subsets of $X$ are retained by their images under $F$.

**retrace** Retracing the steps back to the original $u_m$, we see that.....

**retrieve** [*see also*: recover] We can retrieve $H$ from $H'$ by the formula.....

**return** [*see also*: go back, turn back, revert] The algorithm returns 0 as its answer. • We shall return to this central theme in Chapter 7. • The usefulness and interest of this correspondence will of course be enhanced if there is a way of returning from the transforms to the functions, that is to say, if there is an inversion formula.

**reveal** [*see also*: exhibit, show, demonstrate, disclose, display] A careful look at the proofs reveals that $P$ is measurable. • The next two theorems reveal the importance of this concept. • A complete explication of the Fox spaces is warranted, as it will likely reveal further clues to the differences between the parabolic and hyperbolic theories. • The obvious rearrangement reveals the right side to be identical with (8).

**reversal** Such a bimodule can equivalently be viewed as a $DA$ bimodule over $(A^{op}, A'^{op})$; this perspective is responsible for the reversal of order in the sequences above.

**reverse** [*see also*: converse, opposite] **1** in reverse order • the reverse inequality ⟨inclusion⟩ • We show that..... by reverse induction on $i$, starting at $i = n$ and working down to $i = 0$.
**2** None of these implications can be reversed. • By reversing the steps above, we see that..... • One is tempted to reverse the order of integrations but that is illegitimate here. • with the order of $a$ and $b$ reversed

**revert** [*see also*: return, go back] Reverting to our former notation, we see in particular that.....

**review** **1** In the paper under review the authors study functions which need not lie in the class $B$, but are subject instead to conditions concerning regularity of growth.
**2** In Section 2 we review [= go over] the separation of variables formula. • In Section 2, we review the relevant algebraic background from bordered Floer homology.

**revise** [*see also*: alter, change, modify] To overcome this problem, we revise our definition of a branch. • By revising our choice of $A$ if necessary, we may assume that.....

**revisit** Some of the examples developed here will be revisited in Section 6 in a much more general setting.

**revolution** the revolution of the earth about ⟨round⟩ the sun

**rewrite** [*see also*: reformulate, rephrase, restate] Hence (8) can be rewritten in the form..... • We can rewrite the assumption (3.1) as.....

**right** **1** We now prove a lemma which is interesting in its own right. • We cannot hope to say anything about the structure of each isotropy factor as a system in its own right.
**2** the right member of (8) = the right side of (8) = the right-hand side of (8) [OR the right hand side] • the right-hand side expression • on the right of (8) = on the right-hand side of (8) • The picture on the right shows the dividing line $\alpha$, drawn thick. • The exact sequence ends on the right with $H(X)$. • composition on the right with $p$ • Upon multiplying (1.2) first on the left by $b_k$ and then on the right by $a_k$, we obtain..... • (In a figure caption:) Left: The function $g_k$. Right: The map $F$. • See Figure 3 (right) for an illustration. • Then $D$ lies to the right of $G$. • Let $n_k$ be the first location to the right of the $k$th decimal place of $W$ that has a value less than $b$. • Comparisons are done in left-to-right order. • The entries in each row are increasing from left to right. • The string $N$ (read from right to left) starts with..... • The map $f$, which we know to be bounded, is also right-continuous. • The method of proof of Theorem B can

be adapted to extend the right-to-left direction of Mostowski's result by showing that..... • the rightmost integral [= the last one on the right]
**3** However, as pointed out right after (5),..... • Let us also observe right away that.....

**rigorous** [*see also*: precise] To make this argument rigorous, apply (1.12) to.....

**rise** **1** [*see also*: lead] Every possible such sequence gives rise to..... [NOT "gives raise"]
**2** [*see also*: increase] Inflation in the first quarter rose beyond the acceptable level of 5%.

**role** [*see also*: part, importance, significance, relevance, interest] By interchanging ⟨exchanging⟩ the roles of $X$ and $Y$, it follows that..... • Here $f$ takes over the role of the time parameter. • It turns out that these properties play no role in the proof. • Note that $G$ has order $O(1)$ and as such will play a negligible role in what follows. • In closing this section we take up a result which will play a pivotal role in the characterization of..... • Its role is to rule out having two or more consecutive $P$-moves (on the grounds that they can be performed in one go). • a key ⟨principal/significant/important⟩ role

**root** We now multiply (7) by $p$ and take $n$th roots to obtain.....

**rotate** This is the lattice packing rotated $45^o$. • Let $A$ denote the rectangle $B$ rotated through $\pi/6$ in a clockwise direction about the vertex $(0, 1)$.

**rotation** [*see also*: turn] As the point $z$ moves around the unit circle, the corresponding $J_z$'s are rotations of angle $t(z)$. • rotation through $\pi/3$ ⟨through an angle $\theta$⟩ • a $180^o$ rotation

**rough** [*see also*: approximate, rudimentary] It is therefore reasonable that the behaviour of $p$ should in some rough sense approximate the behaviour of $q$. • For most of the proof it suffices to use the rough bound $p < 1$.

**roughly** [*see also*: approximately, about] Roughly speaking, we shall produce a synthesis of index theory with Fourier analysis. • This says (roughly speaking) that the real part of $g$ is..... • Roughly 0.7 comparisons were done for each character.

**round** **1** [*see also*: around] It is also tempting to get round ⟨get around⟩ this problem by working with..... • the revolution of the earth round the sun
**2** To round out the picture presented by Theorem 5, we mention the following consequence of..... • Values computed for the right side of (2) were rounded up in the fourth decimal place.

**routine** [*see also*: standard] It is a routine matter ⟨a matter of routine⟩ to show that..... • Indeed, it is routine to verify that the index so constructed is independent of the choices made. • The remainder of the proof is routine. • We sketch the rest of the proof, leaving routine details to the reader.

**routinely** There are kneading sequences for which the arguments of Section 4 go through routinely.

**rudimentary** [= very basic, at the simplest level] The requirement that competitors are symmetric will only be used to get some very rudimentary control on the asymptotics of $G$.

**rudiments** [*see also*: basics] Wave front sets are part of microlocal analysis, but we will only need the rudiments of the theory.

**rule** **1** However, such situations are the exception rather than the rule. • There are few exceptions to this rule. • It follows that any itinerary that obeys these four rules corresponds to a point in $B$.
**2** [*see also*: exclude, preclude] The possibility $A = B$ is ruled out in the same way. • Its role is to rule out having two or more consecutive $P$-moves (on the grounds that they can be performed in one go).

**run** The rest of the proof runs as before. • Although these proofs run along similar lines, there are subtle adjustments necessary to fit the argument to each new situation. • Let $A'$ be $A$ run backwards. • As $t$ runs from 0 to 1, the point $f(t)$ runs through the interval $[a, b]$. • The problem one runs into, however, is that $f$ need not be smooth. • But this obvious attack runs into a serious difficulty. • But if we argue as in (5), we run into the integral....., which is meaningless as it stands. • .....where $E$ runs over ⟨runs through⟩ the family $B$.

## S

**'s** Unlike Bell's method, Hall's does not use transfinite induction. • To show the greater simplicity of our method over Brown's, let us..... • Smith's theorem [without *the*] = the Smith theorem • a theorem of Smith's [= one of Smith's theorems] • But we have....., which, by another theorem of Kimney's, is more than enough to guarantee that $P$ gives $A$ outer measure 1. • Gauss's remarkable theorem on..... = the remarkable theorem of Gauss on..... • [Adding *'s* is recommended even after names ending in *s*, *z* or *x*, except ancient ones: *Pythagoras' theorem*; however, the forms like *Jones' theorem* are also correct.] • Fefferman and Stein's theorem = the Fefferman-Stein theorem • [In the plural of abbreviations and numerals, the apostrophe is best omitted: *five 1s*, *PDEs*, *in the 1980s.* However, it should sometimes be used to avoid confusion: *There are three i's in row k.*]

**sacrifice** [*see also*: cost, price, expense] This extension retains control on..... at the sacrifice of losing some control on..... [NOT "loosing"]

**safely** In fact, we will only prove this for $a > 1$, but we can safely ignore the other cases as Mattila already proved the sharp bound for $m_d$ for low dimensions.

**sake** for the sake of simplicity = for simplicity • For the sake of clarity, we shall indicate in what follows to which space $X$ belongs. • Assume for the sake of contradiction that $X$ is compact. • It seems preferable, for clarity's sake, not to present the construction at the outset in the greatest generality possible.

**same** [*see also*: identical] We use the same trick as Boas ⟨as Boas does/that Boas does⟩. • Essentially the same argument as in Section 2 shows that..... • .....with the same symbols as used ⟨as are used⟩ in..... • The quiver $Q_1$ is the same as $Q$ but with $x$ deleted. • Then the same argument as in Theorem 5 applies to show that $L(R)$ fails to be amenable. • This is the same as saying that..... • Since the code is linear, showing that it is 3-error-correcting is the same as showing that..... • But if $E$ is not reflexive or—what is the same—$w$ is weak, then..... • But in fact we get the same thing if we consider all maps into $S$. • Thus A-equivalence and B-equivalence are the same thing. • Now $G$ can be handled in much the same way. • The same applies to $D$. • So $s$ can be thought of as $q$ with $F^q$ extended but $X^q$ left the same.

**satisfactorily** If $p > 2$ then Theorem 2 satisfactorily solves the 'conjugation invariants' problem for the mod $p$ Steenrod algebra, in marked contrast to the partial solution available when $p = 2$.

**satisfactory** [*see also*: suitable, appropriate, good, fit] Fortunately, there is a very satisfactory solution to this problem, due to Vermes. • It will eventually appear that the results are much more satisfactory than one might expect. • On the whole, the solution can hardly be considered satisfactory.

**satisfy** [≠ verify; *see also*: obey] Here $a$ and $b$ are chosen to satisfy (2). [NOT "to verify (2)"] • This forces $f$ to satisfy (6). • The function of Lemma 2 can be made to satisfy (6). • The operator $P$ satisfies essentially the same inequality as $F$ does. • However, $A$ fails to satisfy (3). • Then $F$ need not satisfy (2). [= $F$ does not necessarily satisfy (2).] • The products $F_iG_i$ are very close to satisfying (1). • This proof is unsatisfying in that one needs to know the formula for $f$ in advance.

**save** To save space later on, all modules are given in the form..... • To save space, we will omit these edges from the diagrams. • Taking $J$ minimal such that this inequality holds we get a saving of 1 in the codimension.

**say** [*see also*: assert, state, tell] When $n = 0$, (7) just amounts to saying that..... • This is the same as saying that..... • To say that $A$ is totally disconnected means that..... • Thus $f$ is bounded, and (1) says that $f(a) = 0$. • This says (roughly speaking) that the real part of $g$ is..... • Let us state once more, in different words, what the preceding result says if $p = 1$. • We now exploit the relation (15) to see what else we can say about $G$. • We cannot hope to say anything about the structure of each isotropy factor as a system in its own right. • Such cycles are said to be homologous (written $c \sim c'$). [NOT "are said homologous"] • Let us say that a square class $s$ is *primitive* if every component of $V$ lies in $\{0, 1\}$. • This results from a straightforward modification of Adams's [1] result (see [5] for an exposition of Adams's construction and details of the said modification). • If we adjoin a third congruence to $F$, say $a \equiv b$, we obtain..... • In this case it is advantageous to transfer the problem to (say) the upper half-plane. • Let $D$ be a disc (with centre at $a$ and radius $r$, say) in $C$. • The usefulness and interest of this correspondence will of course be enhanced if there is a way of returning from the transforms to the functions, that is to say, if there is an inversion formula.

**scale** This figure is drawn to a scale of one to ten.

**scenario** Concentrating on the worst-case scenario, we require $D > 0$.

**schematically** The differential $\delta^1$ on $X$ is encoded schematically in a $3 \times 3$ matrix.....

**scheme** [for sth; to do sth; *see also*: procedure, strategy] Choose $S_k$ according to the following scheme.

**scope** [*see also*: range, extent] This example falls within the scope of Cox's theorem. • It is beyond the scope of this paper to give a complete treatment of.....

**scrutiny** [*see also*: examination, inspection, look] Neighbourhoods of points in these spaces appear at first glance to have a nice regular structure, but upon closer scrutiny, one sees that many neighbourhoods contain collections of arcs hopelessly folded up.

**search** **1** The search will succeed provided there is.....
**2** [*see also*: look for, seek] Given $f$, we search for $g$ with properties (1) and (2). • By symmetry considerations [= For symmetry reasons], it is sufficient to search over a region in which.....

**second** [*see also*: other] the second largest element • the second last row = the last but one row • the second author = the second-named author • To guarantee $Q(3)$, we use MA a second time to control the perfect sets. • A second technique for creating new triangulations out of old ones is central retriangulation. • The first statement is obvious, since every flow contains a minimal subflow. For the second, it is enough to show that if.....

**section** [≠ paragraph] The proof is given in Section 3. [NOT "in the Section 3"] • Choose $\delta$ in accordance with Section 8. • See the simplified account in [2, Section 4]. • .....(see the definition at the beginning of Section 2) • In closing this section we take up a result which will play a pivotal role in the characterization of.....

**see** [*see also*: note, observe, view, find out, discover, grasp, realize, recognize] Since..... we see that..... • We shall be interested in seeing whether..... • It is easily seen that..... • The conclusion in (2.3) can be seen by observing that..... • This is easily seen to be an equivalence relation. • We saw this in Section 2. • We now exploit the relation (15) to see what else we can say about $G$. • To see this connection, we need to explain briefly the method by which universal minimal flows are calculated in [KPT]. • A drawback to Pólya trees, and perhaps the main reason why they have not seen much application within the Bayesian nonparametric literature, is that an arbitrary partition tree needs to be specified. • However, over the last fifteen years or so, there have been many examples of explicit descriptions of non-trivial metrizable universal minimal flows: see [Pe], [GW] and [K]. • Throughout this paper embeddings and substructures will be understood in the usual model-theoretic sense (see, e.g., Hodges [Ho]).

**seek** [*see also*: look for, search, try] Here one seeks to minimize $P(x)$ over the class of feedback controls. • We are seeking to verify the conjecture that every Banach sequence algebra $A$ that is a Ditkin algebra is PAA. • In particular, integral curves evolve continuously, and we should seek to represent them using a measure which reflects this continuity in some way. • In applications of Theorem 1, we are usually seeking a lower bound for $f(E)$. • A number of authors [2, 4, 7] have sought algebraic characterizations of partition regularity within families of non-linear Diophantine equations. • Thus $f$ is the function sought. • Substituting the corresponding parameters in the integral formula we arrive at the sought contradiction:..... • Therefore, the system (5) has a solution of the sought-for type.

**seem** [*see also*: appear] At first glance Lemma 2 seems to yield four possible outcomes. • The result above seems not to be a consequence of previous results. • This approach does not seem to generalize to arbitrary substructures. • In our next theorem, we state a characterization of..... which does not seem to have been noticed previously. • It seems that using random distances, one can also use this method for uniform hypergraphs. • However, it does not seem to have been observed that..... • It seems appropriate to mention in passing the corresponding formula for the cohomology of $B_n$. • It seems likely that their results can be extended to..... • It seems plausible that..... but we have been able to establish this only in certain cases. • It seems preferable, for clarity's sake, not to present the construction at the outset in the greatest generality possible. • It may seem strange to define $0.\infty = 0$. • There seems to be no simple formula for .....

**seemingly** [*see also*: apparently] Our first result generalizes (8) by exploiting some general facts seemingly overlooked by the aforementioned authors. • The approach in [GT] provides a unified way of treating a wide variety of seemingly disparate examples.

**segment** Then $C$ lies on no segment both of whose endpoints lie in $K$.

**select** [*see also*: choose, pick] Where there is a choice of several acceptable forms, that form is selected which..... • As we shall see, it is crucial that $F$ is positive for the $A$-decomposition selected.

**selection** [*see also*: choice] a selection of open problems

**self-contained** The proof is mainly included to keep the exposition as self-contained as possible. • The proof is self-contained, without reliance on a computer-algebra system.

**self-evident** There is a self-evident notion of a map between filtered spaces.

**seminal** [*see also*: important] Many of these results are known, and indeed they go back to the seminal paper of Dixmier [D] of 1951.

**send** [*see also*: map] Any map either has a fixed point, or sends some point to its antipode.

**sense** [*see also*: meaning] We remark at the outset that this formula makes sense, because..... • Of course, a literal interpretation of (1) makes no sense. • Nevertheless, it might be possible to make sense of (2) even for non-injective $V$ by considering a multi-valued operator $Z$. • It is therefore reasonable that the behaviour of $p$ should in some rough sense approximate the behaviour of $q$. • The above definition was first given in [D]; care is required because this term has been used in a slightly different sense elsewhere. • in the Boolean algebra sense • We know that (2) holds in the sense of $L^2$ convergence. • Then $F$ is functorial in the sense that..... • Homogeneous spaces are, in a sense, the nicest examples of Riemannian manifolds. • To get a sense of the depth of the conjecture, we consider what might at first glance be an elementary special case.

**sensitive** [to sth] The results are rather sensitive to the value of the recovery rate $\sigma$.

**separate** Thus $N$ separates $M$ into two disjoint parts. • Such $g$ are linearly dense in $C(K)$ and hence separate the points of $M(K)$. • We separate the $n \in S$ for which $F(n) = 1$ into seven groups depending on their residue classes modulo 7.

**separately** We estimate the two terms separately. • Thus we may count the contribution to the periodic points from each prime separately. • It is also clear that there are extensions to....., but they do not seem to be worth the effort of formulating them separately. • The preceding proof contains a result which is interesting enough to be stated separately.

**sequel** In a sequel to the present article, we shall consider..... [= in another paper to be published; do not write "In the sequel" when you mean *In what follows.*]

**sequence** Recall from Theorem 3 that there is a sequence $(a_n)$ of elements of $U$ that is cofinal in $M$. • Altering finitely many terms of the sequence $(u_n)$ does not affect the validity of (9). • Let $(a_n)$ be the sequence of zeros of $f$ arranged so that $|a_1| \le |a_2| \le$..... • Extend this sequence of numbers backwards, defining $N_{-1}$, $N_{-2}$ and $N_{-3}$ by..... • Then the sequence (8) breaks off in split exact sequences. • Thus the long exact sequence breaks up into short sequences. • The exact sequence ends on the right with $H(X)$. • The proof proper [= The actual proof] will consist of establishing the following statements in sequence. • the all-one sequence

**series** There has since been a series of improvements, of which we briefly mention the work of Levinson. • The conference laid the basis for a series of annual gatherings. • But $A_n z^n$ is much larger than the sum of all the other terms in the series $\sum A_k z^k$. • The terms of the series (1) decrease in absolute value and their signs alternate. • We write $V[[h]]$ for the space of formal power series in an indeterminate $h$.

**serious** But this obvious attack runs into a serious difficulty. • Unfortunately, there is a simple but serious error in the final step of the proof.

**serve** This serves to simplify the construction of..... • The two examples, $E_1$ and $E_2$, differ by only a single sequence, $e$, and they serve to illustrate the delicate nature of Theorem 2. • Essentially, the conditions placed on $A$ serve to ensure that $B$ is 'free enough' for the definition of $G$ to work. • The same definition serves for $f$ in $F$. • Note that (2) serves as the definition of its left side. • These are too restrictive for our purposes but the following refinement from [3] will serve us well.

**set** **1** [*see also*: collection, family] Let $Q$ denote the set of positive definite forms on $V$ (including imprimitive ones, if there are any). [NOT "the set of the positive definite forms"] • Let $Q(X)$ be the set of isomorphism classes of quaternionic bundles on $X$. • Let $D$ be the set of products formed by subsets of $\{a_1, \dots, a_n\}$. • We take $M$ to be the set of points in $V$ which map to a point $t$ in $A$. • Here the interesting questions are not about individual examples, but about the asymptotic behaviour of the set of examples as one or another of the invariants (such as the genus) goes to infinity.
**2** [*see also*: put, establish, define] Now $F$ is defined by setting $F(z) =$..... • Setting $\alpha$ equal to $\beta$ in Corollary 3, we obtain..... • We claim that, by setting $w$ to zero on this interval, the value of $F(w)$ is reduced. • Define $F : \omega \to \omega$ by setting $F(m)$ to be the largest member of the finite set $X_m$. • What sets the case $n = 5$ apart is the fact that homotopic embeddings in a 5-manifold need not be isotopic. • By modifying the technique set out [= presented] in [3], we obtain..... • However, in our case, we cannot, for the reasons set out below, expect $C$ to be compact. • In Section 2 we set up notation and terminology. [= prepare] • On $TK$ we set up the symplectic structure induced by the metric. [= introduce]

**setting** [*see also*: context, set-up] In outline, the argument follows that of the single-valued setting, but there are several significant issues that must be addressed in the $n$-valued case. • The proof makes use of many of the ideas of the general case, but in a simpler setting. • [3] contains an extension of Proposition 2 to the setting of finitely additive set functions. • The point is that the operator is now much easier to analyse than is the case in the original setting of the space $B$. • It seems that the relations between these concepts emerge most clearly when the setting is quite abstract, and this (rather than a desire for mere generality) motivates our approach to the subject. • Here the functional-analytic tools required are simpler, but this easier setting allows us to develop some methods without undue worry about technicalities.

**settle** [*see also*: decide, determine, conclude] This argument also settles the case of $K = \Gamma$. • In this paper, we settle that question for normal spaces. • As an application of Theorem A, in Section 2 we settle a question left unanswered in [3]. • The only references known to the authors are [A] and [V], where the case $A = L(E)$ is settled in the negative.

**set-up** [*see also*: context, setting] Let us briefly recall the general set-up. • In the set-up of condition (H), let..... • To prove the desired exactness we again adopt the set-up of the first two paragraphs of the proof.

**several** [*see also*: some, few, many, couple, number] We take advantage of this fact on several occasions, by not actually specifying the topology under consideration. • A model for analysing rank data obtained from several observers is proposed. • The present proof is so arranged that it applies without change to holomorphic functions of several variables. • The argument is a variant of one in [5] and has been used several times since. • Where there is a choice of several acceptable forms, that form is selected which..... • This argument is invalid for several reasons. • There are several cases to consider:.....

**shape** [*see also*: form] This shape bears a striking similarity to that of..... • The shape of $F$ undergoes radical changes as $x$ moves from $A$ to $B$. • The set $A$ is roughly triangular in shape.

**share** [*see also*: enjoy, have] Certain other classes share this property. • It is a pleasure to thank R. Greenberg for bringing his criterion for..... to our attention, and for generously sharing his ideas about it. • Since the girth of $G_0$ is larger than 2, no two hyperedges share more than one vertex of $G_0$.

**sharp** [$\neq$ strict] The estimate is sharp, as the following example shows. • A natural question is how sharp the bounds given in Theorem 6 are.

**sharpen** [*see also*: improve, refine, strengthen] The following lemma is a sharpening of well-known results concerning indecomposable ultrafilters.

**shed** Our result sheds a new light on the problem of.....

**shift** In other words, $X[1]$ is $X$ with its degrees shifted downward by $\lambda$.

**short** [*see also*: brief, brevity, abbreviation, shorthand, fail] The method falls short of providing an explicit formula for the index. • We write $G = FHF^{-1}$ for short. [= for brevity; NOT "We write shortly"] • In short, $F$ preserves the algebraic structure of $M$. [= To sum up briefly] • Our main results state in short that MEP characterizes type 2 spaces among reflexive Banach spaces.

**shortcoming** [*see also*: disadvantage, weakness, fail] A shortcoming of our method is the inability to compare three or more progressions.

**shorthand** [*see also*: abbreviation, brevity, short] Here $k$ is shorthand for $k(|x|)$. • Let us adopt the shorthand $F := FM_iN_i$.

**shortly** [$\neq$ briefly, $\neq$ for short; *see also*: moment, momentarily] .....where $F$ will be defined shortly. [= in a moment] • We shall prove this theorem shortly, but first we need a key lemma. • We shall shortly use this to construct explicit annihilators without prior knowledge of $f_n$. • The benefit of formulating our notion of 'isomorphism section' as above will become clear shortly. • However, shortly after learning about Wiener's work, P. Lévy found a more elementary argument. • Shortly thereafter, Epstein [5] generalized Chekanov's result to show that.....

**should** It is therefore reasonable that the behaviour of $p$ should in some rough sense approximate the behaviour of $q$. • It should be noted that we are not yet in a position to assert the finiteness of either of these numbers. • It should be possible to prove this directly by studying the fixed point set of the action of $G$. • It should now be clear that $A = B$. • One unusual feature of the solution should be pointed out. • The difficulty is that it is by no means clear what one should mean by a normal family. • For a vector $v$ to be in $A$, its contraction with $w$ should vanish. • Denote the largest of those $w_i$ by $w_p$. Should there be no such $w_i$, let $w_p = 0$. [= If there is no]

**show** [*see also*: prove, establish, demonstrate, evidence, reveal] The series can easily be shown to converge. • To show that $M = 0$ is equivalent to showing that..... • It suffices to show that $f'(0) = 1$. • Since the code is linear, showing that it is 3-error-correcting is the same as showing that..... • Examples are given to show that $M$ may not be zero. • As shown by Faraut, this expansion is convergent. • This is true for any family connecting the two flows shown. • This space of curves also shows up in the theorem of Meyer. • The relation to Clifford algebras shows up when we compute the square of $L_a$.

**shrink** By shrinking $A$ to a point, we obtain.....

**side** [*see also*: member] There is no condition relating the sections on one side of $N$ to those on the other side. • Integrating both sides over $X$ shows that..... • the right side = the right-hand side • This question was answered negatively in [5]. However, on the positive side, Davies [5] proved that..... • Our focus now will be on one-sided averages. • [Do not write "On the other side" if you mean *On the other hand.*]

**sight** [*see also*: glance] at first sight

**sign** The terms of the series (1) decrease in absolute value and their signs alternate. • equal up to sign • the minus sign

**significance** [*see also*: importance, role, relevance, interest] The significance of..... is that..... • The significance of this fact for our purposes is captured by Corollary 3. • The significance of the function $f_n$ lies in the easily verified relation..... • In the study of infinite series $\sum a_n$ it is of significance whether the $a_n$ approach zero rapidly. • This has deeper significance than one might first realize.

**significant** [*see also*: considerable, important, substantial] This can result in a significant loss of smoothness. • It is important to recognize that there is a significant subclass of vector fields for which the ambiguity alluded to above disappears. • In all our analysis, only the order of magnitude of $P$ will be significant. • Their result gives no information when $k$ is large, whereas (5) is significant regardless of the size of $k$.

**significantly** [*see also*: considerably, greatly, substantially] The other values are significantly smaller than $x$. • The pressure increases are significantly below those in Table 2.

**signify** [*see also*: mean] Under those conditions, what does the sum on the left hand side of (8) signify?

**similar** [to sth; *see also*: like, reminiscent, resemble] It is in all respects similar to matrix multiplication. [NOT "similar as"] • In the course of writing this paper we learned that P. Fox has simultaneously obtained results similar to ours in certain respects. • The proof is similar in spirit to that of [8]. • Analysis similar to that in Section 2 shows that..... • Similar arguments to those above show that..... • This says that $I$ is no longer than the supremum of the boundary values of $G$, a statement similar to (1). • A similar result holds for..... • Assume $a_1 < a_2$, the argument being similar in all the other cases. • in a similar fashion • in an exactly similar way

**similarity** [*see also*: resemblance] This shape bears a striking similarity to that of..... • Note the similarity with Luzin's theorem.

**similarly** [*see also*: likewise] Then $F$ is similarly obtained from $G$. • Similarly to [4], we first consider the nondegenerate case. [OR Just ⟨Much⟩ as in [4]; *not*: "Similarly as in [4]"] • Here we consider a dual variational formulation which can be derived similarly to that for the sandpile model. • Each $A(n)$ corresponds to an element $A'(n)$ in $V$, and similarly for $B(n)$.

**simple** [*see also*: easy, straightforward, direct] Unfortunately, there is a simple but serious error in the final step of the proof. • Here is a simple direct proof. • This strikingly simple proof was discovered by J. Dixon. • It is useful to consider some rather simple examples to gain some intuition. • Although the idea is simple, its implementation is complicated by the fact that..... • In fact, the computation for $A$ becomes somewhat simpler. • We remark that this proof seems conceptually and calculationally simpler. • We first prove the (rather simpler) Theorem 7, by effecting a quite general reduction of the problem to the study of certain isotropy factors. • The simplest example of this is furnished by.....

**simplicity** [*see also*: ease] For simplicity of notation, we use the same letter $f$ for..... • For simplicity, we suppress the explicit dependence on $x$ in the notation. • One can also study these equations on manifolds, but we stick to $\mathbf{R}^n$ for simplicity. • Our choice of $Q$ for all this discussion has been purely for simplicity.

**simplify** To simplify the writing, we take $a = 0$ and omit the subscripts $a$. • This simplifies to $f = g$ for $x = 1$. • For this choice of $\alpha, \beta$ and with $u = z = s$, the expression (5.3) simplifies greatly. • It simplifies the argument, and causes no loss of generality, to assume..... • As is often the case with this type of sum, we can simplify our argument by taking advantage of multiplicativity. • This assumption is useful for simplifying proofs. • Neither is the problem simplified by assuming $f = g$. • See the simplified account in [2, Section 4]. • We can put a simplifying assumption on the grading set of the $DD$ bimodule.

**simply** [*see also*: just] If we simply mimic the standard proof of..... we are led to..... • If $M$ is empty we write simply $f \sim g$. • The *rank of appearance* (or simply the *rank*) of an integer in the sequence $U(P)$ is the least positive integer $n$ such that..... • The lower limit is defined analogously: simply interchange sup and inf in (1). • Then $G$ is simply $g$ with its periodic string read backwards. • The reason for preferring (1) to (2) is simply that (1) is manifestly invariant. [Note the double $r$ in *preferring*.] • The presence here of the direct summand $H$ is simply to prevent $A$ from having disconnected spectrum.

**simultaneously** [*see also*: time] These two possibilities cannot arise simultaneously. • In the course of writing this paper we learned that P. Fox has simultaneously obtained results similar to ours in certain respects.

**since** **1** [*see also*: as, because] Since $f$ is compact, we have $Lf = 0$. • Since $f$ is compact, it follows that $Lf = 0$. [NOT "Since $f$ is compact, then $Lf = 0$."] • [In sentences beginning with *Since*, it is sometimes unclear which part is the premise, and which is the conclusion: instead of writing "Since $A = B$, $B = C$, $C = D$, $A = C$", write e.g. *Since* $A = B$ *and* $B = C$, *and since moreover* $C = D$, *it follows that* $A = C$.] • The first statement is obvious, since every flow contains a minimal subflow. • We remark that the Urysohn space $U$ without any restriction on distances, which is not a $B$-structure since it is uncountable, has an extremely amenable isometry group.

**2** The argument is a variant of one in [5] and has been used several times since. • There has since been a series of improvements, of which we briefly mention the work of Levinson. • Some, but not yet all, of these 22 forms have since been shown to be regular.

**single** [*see also*: individual, particular, specific, unique, only] **1** This will be proved by showing that $H$ has but a single orbit on $M$. • Each row of $A$ has a single $\pm 1$ and the rest of the entries 0. • The two examples, $E_1$ and $E_2$, differ by only a single sequence, $e$, and they serve to illustrate the delicate nature of Theorem 2. • Can $E$ consist of a single point?

**2** With this definition of a tree, no vertex is singled out as the root.

**situation** [*see also*: circumstances, state, set-up] We do not know whether or not $Q(R) = R$ in this situation. • Rather than discuss this in full generality, let us look at a particular situation of this kind. • Suppose, to look at a more specific situation, that..... • The situation is quite different if we replace $H(U)$ by certain subclasses. • If $A = B$, how does the situation differ from the preceding one? • As opposed to the situation considered in [5], the functions used here are..... • There are many situations where this occurs naturally. • We shall encounter similar situations again, and shall apply convergence theorems to them without further comment. • Here are some other situations in which we can draw conclusions only almost everywhere.

**size** [*see also*: magnitude] Clearly, $F$ has size $\le p$. • All inputs of size $n$ are equally likely to occur. • Their result gives no information when $k$ is large, whereas (5) is significant regardless of the size of $k$. • The aim of this article is to study the relationship between the size of $A$, as measured by its diameter, and the extent to which $A$ fails to be convex. • Then $P$ is the product of several integer factors of about $x^n$ in size.

**sketch** [*see also*: outline] **1** A brief sketch of the reasoning is given below. A sketch proof is given in Section 5.

**2** We sketch the proof of the easy half of the theorem.

**skip** We do this in the first section, which the reader may skip on a first reading.

**slant** area shaded with slanting lines

**slight** [*see also*: little, small, minor] However, the chance of success is very slight. • However, a slight strengthening of the hypotheses does give us a regular measure. • We write $\beta =$ ....., which is a slight modification to the previous version of $\beta$.

**slightly** [*see also*: little, somewhat] We have to change the proof of Lemma 3 only slightly. • Unfortunately, the notation from number theory slightly conflicts with the notation from probability theory. • Slightly refining a result of [8], Davenport proved..... • The estimates (5) then follow by slightly increasing the value of $m$. • They are all slightly different. • Note that (2) is a slightly weakened version of the Pólya inequality. • The motivation for the results of this section is the following result of John (paraphrased slightly to suit our purposes).

**small** [*see also*: little, minor, slight, below] ....., where $C$ can be made arbitrarily small by taking..... [NOT "arbitrary small"] • In fact, this will be proved to hold for all sufficiently small $h$. • That is, for $a$ sufficiently small, the expected number of hyperedges in $G$ that do not belong to any cycle of length less than $g$ is more than $C$. • However small a neighbourhood of $x$ we take, the image will be..... [= No matter how small] • The other values are significantly smaller than $x$. • Therefore, $F$ is not ⟨no⟩ smaller than $G$. • Thus $A$ is the smallest algebra with this property. • There is a smallest algebra with this property. • Then $B$ contains a unique element of smallest norm.

**so** [*see also*: consequently, hence, thus, therefore, way] Indeed, it is routine to verify that the index so constructed is independent of the choices made. • The constants are so adjusted in (6) that (8) holds. • .....where $C$ is so chosen ⟨chosen so⟩ that..... • The control problem is to choose an investment strategy so as to minimize..... • The first of these was suggested by J. Serrin, who showed how to modify my earlier treatment of $J(X)$ so as to obtain stronger results with no extra effort. • The ordered pair $(a, b)$ can be chosen in 16 ways so as not to be a multiple of $(c, d)$. • Thus $A$ is compact, and hence so is $B$. • Consequently, $A$ is compact. Therefore, so is $B$. • Since $R$ is polynomial in $x$, so also ⟨so too⟩ is $P$. • We have been working under the assumption that..... Suppose now that this is no longer so. • If this is so, we may add..... • If this is not so, a linear fractional transformation will make it so. • Then $F$ is bounded but it is not necessarily so after division by $G$. • We will want to prove that..... To do so, we will need to define..... • A geodesic which meets $bM$ does so either transversally or..... • This shows that the sequence (1) is bounded below, and so the definition of $L(f)$ is meaningful. • Then $a = b$, so that $f$ is not injective. • However, over the last fifteen years or so, there have been many examples of explicit descriptions of non-trivial metrizable universal minimal flows: see [Pe], [GW] and [K].

**solely** [*see also*: alone, only, single] Since the entire argument is based solely upon assumption (6.1), the conclusion of the theorem must hold.

**solution** [to/of sth; *see also*: answer, explanation] This equation has a unique solution for every $p$. • To guarantee existence and uniqueness of a solution to (3), the function $g$ must be..... • Fortunately, there is a very satisfactory solution to this problem, due to Vermes. • If $p > 2$ then Theorem 2 satisfactorily solves the 'conjugation invariants' problem for the mod $p$ Steenrod algebra, in marked contrast to the partial solution available when $p = 2$. • This observation prompted the author to look for a more constructive solution. • It seems that the solution of Problem 1 is still out of reach.

**solve** [*see also*: resolve] We can solve the resulting equations successively for $c_1, ..., c_n$. • We remark that Bennett and the third author completely solved equation (4) in the case when..... • If $p > 2$ then Theorem 2 satisfactorily solves the 'conjugation invariants' problem for the mod $p$ Steenrod algebra, in marked contrast to the partial solution available when $p = 2$. • If $y$ is a solution, then $ay$ also solves (3) for all $a$ in $B$. • This easily allows the cases $c = 1, 2, 4$ to be solved. • This problem is still far from being solved. • The MR algorithm takes $n$ steps to solve the problem. • Some interesting cases remain unsolved.

**some** [*see also*: few, several, couple, number] Each $f$ lies in $zA$ for some $A$. • Note that some of the $X_n$ may be repeated. • Some of the isomorphism classes above will have a rank of 2. • Some such difficulty is to be expected. • The theorem implies that some finite subcollection of the $f_i$ can be removed without altering the span. • It is therefore reasonable that the behaviour of $p$ should in some rough sense approximate the behaviour of $q$.

**something** Strictly speaking, we should write something like $a(l, m, n)$ to reflect the dependence; we shall rely upon context instead. • Specifically, one might hope that a clever application of something like Choquet's theorem would yield the desired conclusion.

**sometimes** [*see also*: occasionally, occasion] This is sometimes expressed by saying that..... • The name 'Riesz theorem' is sometimes given to the theorem which asserts that..... • The sequence $a_n$ is what is sometimes called a recovery sequence for $v$. • For brevity, and when there is no danger of confusion, we sometimes omit the superscripts.

**somewhat** [*see also*: little, slightly, fairly, rather] Our results in this section can be refined somewhat by considering..... • In fact, the computation for $A$ becomes somewhat simpler. • This is somewhat surprising since..... • We shall discuss this again at somewhat greater length in Section 2.1. • Fox obtained a somewhat better result:.....

**soon** [*see also*: once] This will be proved as soon as we show that..... [NOT "as soon as we will show"]

**sophisticated** [*see also*: complex, intricate, refine] To recover Wiener's famous result that Brownian paths are continuous, one needs to use more sophisticated reasoning.

**sort** [*see also*: kind, type] This result may be thought of as a sort of regularity theorem. • Our aim here is to give some sort of functorial description of $K$ in terms of $G$. • This sort of proof will recur frequently in what follows. • This sort of tacit convention is used throughout Gelfand theory.

**source** [*see also*: origin] An excellent source on these matters is [G75]. • Since most of the results presented are quite classical (the novelty lies in the arrangement, and some of the proofs are new), I have not attempted to document the source of every item. • Nonetheless, [K] was our main source of inspiration.

**space** **1** There is not space to enumerate them all here. • To save space later on, all modules are given in the form..... • a function continuous in space variables • Let $R^n$ be Euclidean $n$-space. [OR the Euclidean $n$-space]
**2** The $m$ points $x_1, \dots, x_m$ are regularly spaced $t$ units apart. • Let $a_1, \dots, a_R$ be $1/n$-spaced points in $B$.

**speak** [*see also*: talk] Roughly speaking, we shall produce a synthesis of index theory with Fourier analysis. • Strictly speaking, we should write something like $a(l, m, n)$ to reflect the dependence; we shall rely upon context instead. • Hence, although the topology of reducts of $A$ is uniformly controlled, so to speak, by that of $A$, the model theory of the reducts can be much wilder. • The two polygons $P$ and $P'$ are the two ends of the orbit, so to speak.

**special** [*see also*: individual, particular, specific] An important special case is when $L$ is empty. • This abstract theory is not in any way more difficult than the special case of the real line.

**specialize** For $f = g$, this specializes to the result of [7]. • Now (3), specialized to our case, becomes..... • We now specialize to the situation of Lemma 8. • However, for a general set $S$ of primes, this is cumbersome, so we will specialize to sets which are easier to deal with. • More specialized notions from Banach space theory will be introduced as needed.

**specific** [*see also*: concrete, individual, particular, special, definiteness] Suppose, to look at a more specific situation, that..... • This implies that the local martingale must take a very specific form. • Section 2 contains some specific preparatory material, notably a brief discussion of the category of virtual vector bundles. • To be more specific, consider.....

**specifically** It is smoothness with which we are specifically concerned. • Specifically, choose $A = B = id/dx$. • Specifically, one might hope that a clever application of something like Choquet's theorem would yield the desired conclusion.

**specify** [*see also*: detail, precise] ....., where each function $g$ is as specified above. • Choose a sequence of compact sets $K_n$ with the properties specified in Lemma 3. • The parent and child relations often used with trees can be derived once a root is specified. • In the latter case we may simply adjust $F$ to equal 1 on the Borel set where it falls outside the specified interval. • We take advantage of this fact on several occasions, by not actually specifying the topology under consideration. • We will not normally specify the index set $I$. • To give the map $s$, we just have to specify where to map generators of the homology of $M$.

**spirit** The proof is similar in spirit to that of..... • Although the definition may seem artificial, it is actually very much in the spirit of Darbo's old argument in [5].

**split** [*see also*: decompose, subdivide] Moreover, $M$ splits as $K \times L$. • Now (1) splits into the pair of equations..... • The proof conveniently splits into two cases. • We split our proof into two cases depending on the homogeneity of the $C_i$. • We shall split up $K$ as follows.

**square** **1** As an $L$-module, $Q$ is isomorphic to the symmetric square of the natural $L$-module.
**2** By repeated squaring to eliminate the radicals in this equality, we obtain.....

**stage** [*see also*: degree, extent, step] We are now ready to proceed to the final stage of our construction. • At this stage we appeal to Theorem 2 to deduce that..... • We may require that the point $P$ lie in one of the trees constructed before or during the $i$th stage of the induction. • At stage $n$ of the construction, we will basically apply the main lemma to.....

**stand** [*see also*: state] Here $dx$ stands for Lebesgue measure. [OR the Lebesgue measure] • The model as it stands does not satisfy the conditions of..... • But if we argue as in (5), we run into the integral....., which is meaningless as it stands. • We make two standing assumptions on the maps under consideration.

**standard** [*see also*: common, customary, familiar, usual, routine] Using the standard inner product we can identify $H$ with $H^*$. • The standard proofs proceed via the Cauchy formula. • A standard verification shows that..... • It is a standard fact that..... • Let us sketch the proof of the first estimate, which is a variation of standard arguments. • Although standard, the notion of a virtual vector bundle is not particularly well known. • The following basic properties of spectral isometries are by now standard (see, e.g., [6]).

**standpoint** [*see also*: viewpoint] From the standpoint of linear programming, the above discussion is incomplete in that it throws no light upon the question whether the function $F$ attains its infimum.

**star** Here the starred sum is over all primitive Dirichlet characters modulo $q$.

**start** **1** [*see also*: beginning, outset] We may thus assume from the start that..... • We now fulfil the promise made at the start of the proof by handling the case of $G = S_n$.
**2** [with sth; by doing sth; *see also*: begin, commence, proceed] We start with the observation that..... • Lemma 3 suggests that we start by considering $A_1$. • In [2], this theorem is made the starting point of Gelfand theory. • a discrete-time random walk $X(t)$, $t \geq s$, started at $X(s) = x$ • curves starting at the origin

**state** **1** [*see also*: circumstances, situation, condition] The number of distinct states a processor may be in is at most $n$. • The state of the art is the following result. [= best available]
**2** [*see also*: assert, say, give, formulate, stand] We end this section by stating without proof an analogue of..... • In order to state these conditions succinctly, we introduce the following terminology. • In our next theorem, we state a characterization of..... which does not seem to have been noticed previously. • The preceding proof contains a result which is interesting enough to be stated separately. • In [F] it is incorrectly stated that the unimodality conjecture is open for Weyl groups. • Stated informally, continuous functions of measurable functions are measurable. • We have not required $f$ to be....., and we shall not do so except when explicitly stated. • Hence $A$ has the stated continuity properties. • Part (b) follows from (a) on noting that $A = B$ under the conditions stated. • Actually, [3, Theorem 2] does not apply exactly as stated, but its proof does. • The weight on the attaching point is as stated, since.....

**statement** [*see also*: assertion, conclusion, formulation] The following three statements are equivalent:..... • Now, (3) is merely an abbreviation for the statement that..... • A statement equivalent to (c) is that to each $w$ there corresponds a sequence..... • Here is a more explicit statement of what the theorem asserts. • The convergence of the sum on the left is of course a weaker statement than the convergence of (2). • It is important that the orders of $F$ and $G$ are comparable, a statement made more precise by the following lemma. • However, (ii) is nothing but the statement that..... [= only the statement that]

**stay** [*see also*: remain, continue] The point is that (5) can stay small because..... • The curvature is positive, zero, or negative according to whether two geodesics initially perpendiculat to a short geodesic arc through $p$ converge, stay parallel, or diverge. • If we stay a fixed distance off the critical line, we do not expect Benford behaviour. • The Markov chain $z_k$ takes no account of how long the process stays in $V$. • This path stays in $B$ for all time.

**step** [*see also*: stage] The remainder of our work breaks into five steps. • As a first step we shall bound $A$ below. • For the base step of the induction, consider a vertex $t$ in $A$. • A key step in obtaining (6) is Jensen's inequality. • This was one of the major steps in Wiener's original proof of his Tauberian theorem. • ....., from which it is an easy step, via Lemma 1, to the conclusion that..... • The next step is to establish..... • Going back to the existential step of the proof, suppose that..... • All the computation will be done by one processor in one step. • By reversing the steps above, we see that..... • Retracing the steps back to the original $u_m$, we see that..... • Using (2) and following steps analogous to those above, we obtain..... • To be sure we can carry out step $n$, we need to know that..... • The MR algorithm takes $n$ steps to solve the problem. • at each step of the construction

**stick** [*see also*: keep, continue] One can also study these equations on manifolds, but we stick to $R^n$ for simplicity. • All our results can be extended in this way, but we shall stick to considering $P$ rather than $P'$.

**still** [*see also*: continue, yet] The operators $A_n$ have still better smoothness properties. • An ingenious alternative proof, shorter but still complicated, can be found in [MR]. • The new $X$ is no more continuous, although it still has norm 1. • This is of course still an implicit characterization of $V$, since..... • It seems that the solution of Problem 1 is still out of reach. • Then we can find a subsequence (still denoted by $a_n$) such that $a_n < 1$ for all $n$. • We conjecture that in the general case refinements of the above ideas will essentially still work to give similar results.

**stipulation** [*see also*: requirement, demand] These extra stipulations are unimportant, but are given for definiteness.

**stop** There is nothing to stop both sides of (1.8) from being $+\infty$.

**straight** [*see also*: directly] Then the one and only integral curve of $L$ starting from $x$ is the straight line $l$. • The boundedness follows straight from the definition of $G$.

**straightforward** [*see also*: direct, easy, simple] Alternatively, it is straightforward to show directly that..... • The proof of (2) is a matter of straightforward computation, and depends on the relation $ab - cd = 1$. • in a fairly straightforward way

**strange** [*see also*: unusual] It may seem strange to define $0.\infty = 0$.

**strategy** [for doing sth; *see also*: procedure, scheme, method, way] Our basic strategy for proving (1) is different. • We start with a brief overview of our strategy. • Furthermore, adopting this strategy considerably eases constructing a coding tree from a linear order. • The condition..... can be improved by employing a strategy similar to that underlying the proof of Theorem 2. • The most direct way in which one might try to implement this strategy is to let $G$ be a free group. • The strategy is much the same as for the proof of Theorem 2. • a basic ⟨broad/general/overall/viable⟩ strategy

**streamline** Although more precise results are known, we provide a streamlined version of these estimates that is sufficient for our purposes. [= simplified, effectively organized, without unnecessary elements]

**strength** [*see also*: force] We do not need the full strength of the bounds in (4).

**strengthen** [*see also*: improve, sharpen, refine, strong] Theorem 3 can be strengthened by requiring that the ultrafilter $U$ be additionally conservative. [Note the subjunctive *be*.] • However, a slight strengthening of the hypotheses does give us a regular measure.

**stress** **1** [*see also*: emphasis] In his lectures, he laid great stress on the use of.....
**2** [*see also*: emphasize, underline, underscore, highlight] Let us stress that $c$ is a term and not a subset of $C$. • We should stress that this is only one of several versions of the 'measurable selector theorem', due variously to von Neumann, Jankow, Luzin and others. • It should be stressed, however, that.....

**strict** Strict inequality [= with a $<$ or $>$ sign] can occur ⟨hold⟩ in (8) only if..... • The condition (8) then holds with strict inequality.

**strictly** [*see also*: properly] This class is strictly larger than..... • Then $F$ is strictly less than $G$.

**strike** This shape bears a striking similarity to that of..... • All three cases bear a striking resemblance:..... • This is in striking contrast to..... • The two figures appear strikingly different.

**stringent** [*see also*: restrictive] Condition (i) becomes more stringent as $n$ increases.

**strive** Striving for a contradiction, assume that.....

**stroke** [*see also*: go] The idea of the following proof, which yields both (a) and (b) at one stroke, is due to von Neumann.

**strong** [*see also*: strengthen] A stronger topology makes it easier for a given function to be continuous. • In fact, this proof shows that a stronger result holds, namely,..... • The first of these was suggested by J. Serrin, who showed how to modify my earlier treatment of $J(X)$ so as to obtain stronger results with no extra effort.

**structure** [*see also*: form] Then $G$ has the structure of a group such that..... • Neighbourhoods of points in these spaces appear at first glance to have a nice regular structure, but upon closer scrutiny, one sees that many neighbourhoods contain collections of arcs hopelessly folded up. • • This requires us to give $M$ an $R$-module structure. • Note that $E$ can be given a complex structure by setting..... • Thus, the tensor algebra acquires a graded algebra structure. • They defined the concept solely in terms of the norm of the Banach space, deliberately avoiding any extra structure. • The structure of a Banach algebra is frequently reflected in the growth properties of its analytic semigroups.

**study** **1** [*see also*: consideration, discussion, examination, investigation, research] Our study grew out of some valuable conversations with Kirk Douglas. • Their study resulted in proving the conjecture for..... • Much of the rest of the paper is devoted to a general study of..... • In Section 2, we lay the foundations for a systematic study of..... • In the study of infinite series $\sum a_n$ it is of significance whether the $a_n$ approach zero rapidly. • In Section 3 we proceed with the study of..... [= start or continue the study] • In [7] the authors undertook a detailed study of..... • This process is apparently novel and seems natural enough to warrant study. • a careful ⟨comprehensive/systematic/comparative/definitive/profound/thorough/meticulous⟩ study
**2** [*see also*: consider, examine, investigate, explore] One can also study these equations on manifolds, but we stick to $R^n$ for simplicity. • If one studies the proof of..... it is apparent that (2) is never used. • The aim of this article is to study the relationship between the size of $A$, as measured by its diameter, and the extent to which $A$ fails to be convex. • This is part of a larger project to study the Galois groups of periodic points of arbitrary polynomial maps. • This functor is much studied in [Ab] and [Ce]. • These three results lead to several illuminating pieces of information about the (insufficiently studied) Berger property in general spaces.

**subdivide** [*see also*: split] Each ray will subdivide into a pair of dynamically distinct pieces.

**subject** **1** [*see also*: theme, topic, matter, point, issue] This subject is treated at length in Section 2. • See also [3], where functions of exponential type are the main subject. • Bases for finite exceptional groups will also be the subject of a future paper. • We cannot survey this whole subject here. • It seems that the relations between these concepts emerge most clearly when the setting is quite abstract, and this (rather than a desire for mere generality) motivates our approach to the subject.
**2** Choose $f$ in $G$ subject only to the condition that $Lf = 0$. • They established the Hasse principle subject to a rank condition on the coefficients. • Take $N$ to be a family of normal measures in $P(X)$ such that $N$ is maximal subject to the condition that the supports of the measures in the family are pairwise disjoint. • The location of the zeros of a holomorphic function in a region $\Omega$ is subject to no restriction except the obvious one concerning the absence of limit points in $\Omega$. • In the paper under review the authors study functions which need not lie in the class $B$, but are subject instead to conditions concerning regularity of growth.

**subordinate** a partition of unity subordinate to the covering $\{U_i\}$ [OR subordinated to]

**subscript** For brevity, we drop the subscript $t$ on $h_t$. • We drop the subscript when confusion is unlikely. • To simplify the writing, we take $a = 0$ and omit the subscripts $a$. • .....where the subscript $r$ denotes radial differentiation. • Here, in accordance with the usual summation convention, we sum over any index which appears as both a subscript and a superscript.

**subsequence** Then we can find a subsequence (still denoted by $a_n$) such that $a_n < 1$ for all $n$. • Then we can find a subsequence (not renamed) such that $a_n < 1$ for all $n$. • Thus every subsequence contains a further subsequence converging weakly to some limit. • Passing to a subsequence if necessary, we can assume that.....

**subsequent** [*see also*: following, succeeding, ensuing] Theorem 2 will form the basis for our subsequent results. • We prove here some facts concerning unique ergodicity for amenable groups that will be used in subsequent sections.

**subsequently** [*see also*: next, then, below] Here and subsequently, $M$ denotes..... • We note in passing that Fox has subsequently improved Barnes's result by showing that.....

**substance** [*see also*: essence, point, nature] What the theorem is saying in substance is that..... • We should expect that..... This expectation is given substance by the following result.

**substantial** [*see also*: considerable, significant, extensive, wide] This proof will require substantial changes to cover the case of..... • A substantial no-man's-land persists in which neither alternative has been proved. • Our proofs make substantial use of classical topology of the plane. • We must take account of the fact that $A$ may have a substantial effect on the input length. • We thank Jacob Hicks for his substantial computational aid.

**substantially** [*see also*: considerably, significantly, largely] The number of..... has increased substantially [= considerably] in recent years. • The purpose of this paper is to expand substantially the class of maps for which the index can be computed. • The level of..... has remained substantially [= largely, essentially] unchanged for many years.

**substantiate** This claim, however, might be difficult to substantiate. [= prove]

**substitute** **1** We will use Lemma 4 as a substitute for the existence of weak-star convergent subsequences.
**2** [sth for sth; sth into/in sth; *see also*: put, replace] We can substitute a subspace $A$ of $X$ for the set $\{0, 1\}$. • Substitute this value of $z$ into ⟨in⟩ (7) to obtain.....

**subsume** [sth under/into sth] Most of these phenomena can be subsumed under two broad categories. [= included in] • We do not give full details here as the discussion will eventually be subsumed into that of the next section.

**subterfuge** [= trick] The analogous construction when $A$ is not affine entails [= requires] the following subterfuge.

**subtle** [*see also*: delicate, fine, minor] Although these proofs run along similar lines, there are subtle adjustments necessary to fit the argument to each new situation.

**subtlety** There is a slight subtlety, since $A$ is not exactly equivalent to $B$.

**subtract** [*not*: "substract"] Since $Z$ is a finite set, we may continue subtracting suitable scalar multiples of the $x_i$ from $x$. • By subtracting a constant if need be, we may assume.....

**succeed** [in doing sth; *see also*: work] The search will succeed provided there is..... • We succeeded in proving (4) for amenable groups. [NOT "succeeded to prove"]

**succeeding** [*see also*: following, ensuing, subsequent] This theorem and the succeeding one are consequences of Theorem 2 of [P].

**success** They have a 90 per cent chance of success. • However, the chance of success is very slight.

**successful** Mary Lane deserves our special thanks for her part in bringing this volume to a successful completion.

**successfully** The same kind of approach has been taken successfully to determine all regular maps of various small genera.

**successive** [= consecutive] Successive vertices on a path have alternating labels. • an interval of successive integers

**successively** [= consecutively] We can then successively determine $F$ in the other components. • We can solve the resulting equations successively for $c_1, ..., c_n$.

**succinct** [= concise; *see also*: brief] a succinct account of the theory

**succinctly** [= concisely] To state these conditions succinctly, we introduce the following terminology.

**such** Assume that such a $g$ exists. • Theorem 1 can be used to bound the number of such $T$. • There is a map such that..... [NOT "There is such a map that"] • One such mapping is the function $f$ given in..... • There are few, if any, other significant classes of processes for which such precise information is available. • Some such difficulty is to be expected. • For general linear operators, there is not such an extensive functional calculus as there is for self-adjoint operators. • a shorter such proof • every such map • many such maps • Here the interesting questions are not about individual examples, but about the asymptotic behaviour of the set of examples as one or another of the invariants (such as the genus) goes to infinity. • This convention simplifies the appearance of results such as the inversion formula. • We observe a prolonged rise in prices such as occurred in the late 1960s. • Our presentation is therefore organized in such a way that the analogies between the concepts of topological space and continuous function, on the one hand, and of measurable space and measurable function, on the other, are strongly emphasized. • Such was the case in (8). • We can continue to pick elements of $B$ as above. But there are only finitely many such, a contradiction. • We take $b$ to be a finite substructure of $k$ that contains $a_0$ and is closed under $\Lambda$. Such exists by the compactness of $\Lambda$. • Note that $G$ has order $O(1)$ and as such will play a negligible role in what follows.

**suffice** [*see also*: sufficient, enough] From Proposition 2, and in view of Theorem 3, it suffices to show that..... • It suffices now to prove that $\Gamma_3 = \Gamma_2$. • To tell whether a labelled partial order is a skeleton, it suffices to look at its substructures of size at most three. • For our purposes, suffice it to say that if $A$ is close to $B$, then.....

**sufficiency** We now prove sufficiency. [OR the sufficiency]

**sufficient** [*see also*: enough] Neither (1) nor (2) alone is sufficient for (3) to hold. • This is clearly sufficient to make the computation for $T$. • However, (5) is sufficient to guarantee invertibility in $A$. • By symmetry considerations [= For symmetry reasons], it is sufficient to search over a region in which.....

**sufficiently** [*see also*: enough] for all sufficiently small $h$ • for $n$ sufficiently large

**suggest** [doing sth; *see also*: indicate, propose, recommend] This suggests that $A$ can exist. • Unfortunately, the details of the calculations were omitted, and there is some doubt on whether the result is correct since our analysis suggests that $P_2$ must vanish to third order; the presence of $L^{-2}$ is also suspect. • Lemma 3 suggests that we start by considering $A_1$. • Some other problems suggest themselves in the topological setting. • This suggests the introduction of the differential operator $A =$..... • This suggests a question: under what conditions is it true that.....? • The above construction suggests investigating the solutions of..... • The first of these was suggested by J. Serrin, who showed how to modify my earlier treatment of $J(X)$ so as to obtain stronger results with no extra effort. • Using a basis of this kind was suggested to us by Fox (private communication). • [Do not write "He suggested me to study this" if you mean *He suggested studying this* or *He suggested I should study this.*]

**suggestion** The author thanks the referee for his helpful suggestions concerning the presentation of this paper. • We are grateful to the referee for a number of helpful suggestions for improvement in the article. • At the suggestion of the referee, we consider some simple cases.

**suit** [*see also*: fit, convenient, tailor] This definition best suits our purpose of showing that..... • The motivation for the results of this section is the following result of John (paraphrased slightly to suit our purposes). • A detailed exposition, more suited to the purposes of the present article, is given in [9]. • It became clear that the Riemann integral should be replaced by some other type of integral, better suited for dealing with limit processes.

**suitable** [*see also*: appropriate, convenient, good, correspond, relevant] By suitable translation of variables in (5), we may arrange that $k =$..... [NOT "By adequate translation"] • It suffices to take a suitable translate of $U$. • Having established (1), one might be tempted to try to extend this result to general $p$ through the choice of a suitable ideal $B$. • Since $Z$ is a finite set, we may continue subtracting suitable scalar multiples of the $x_i$ from $x$.

**suitably** [*see also*: appropriately] Here $Y$ is a Poisson variable suitably chosen to approximate $X$ in distribution. • We finish by mentioning that, suitably modified, the results of Section 2 apply to the $AP$ case. • with $N$ being a suitably large constant • in a suitably small neighbourhood of zero

**sum** [*see also*: summarize] **1** Hence $F$ is the sum of an injective module and a projective module. • Here $p_2(r)$ is the sum of the squares of the divisors of $r$. • Every $F$ is a sum of irreducible elements. • Here $F$ is the sum of a collection of..... • The sum is taken over all $a$ dividing $p$. • This interpretation does little, in sum, to add to our understanding of.....
**2** [*see also*: add] Summing (2) and (3), we obtain..... • Keep only those vertices whose coordinates sum to 4. [= add up to 4] • Let $T_1, ..., T_r$ be i.i.d. uniform $[0, 1]$ random variables conditioned to sum to 0 modulo 1. • Here, in accordance with the usual summation convention, we sum over any index which appears as both a subscript and a superscript. • To sum up, we have shown that.....

**summarize** [≠ resume; *see also*: sum, summary] We summarize some of its main properties, borrowing from the elegant discussion in Henson's article. • Theorems 2 and 3 may be summarized by saying that..... • We can summarize this discussion with the following theorem:..... • Summarizing, whenever $n \geq 4$, we have shown that necessarily $p < 5$.

**summary** [*see also*: summarize] In summary, if $F$ is..... • In particular, there is a summary of what is known about polarized pairs with small genus.

**superfluous** [*see also*: redundant] We now prove that the positivity assumption is in fact superfluous.

**superior** However, (5) is superior to (4) only when $n$ is cubefree.

**superscript** For brevity, and when there is no danger of confusion, we sometimes omit the superscripts.

**supersede** [= replace by something newer] These lower bounds were recently superseded by work of Wane [2], who showed that $a_n \geq 2$ for all odd $n$.

**supplement** [*see also*: add] We supplement this by bounding $S$ and $I$.

**supply** [*see also*: give, furnish, offer, provide, yield] This equation supplies the key to the proof of Theorem 2. • It is obvious that the above theorem supplies an algorithm to effectively recognize whether $SP$ is in $A$. • The statement does appear in [3] but there is a simple gap in the sketch of proof supplied. • (We thank Erik Lund for supplying this argument.)

**support** **1** a function with compact support. • We now prove that $f$ cannot have compact support unless $f = 0$ a.e. • This research was initiated when the first author was visiting the University of Alberta in the summer of 2008; the financial support and kind hospitality are gratefully acknowledged.
**2** Research partially supported by NSF Grant No. 23456. • Then $F$ is supported in $\{|z| \leq 1\}$. • Some partial evidence to support this conjecture is discussed in [3]. • We offer numerical evidence to support a conjecture that there exist infinitely many primes of this type.

**suppose** [*see also*: assume, presume] Suppose, to look at a more specific situation, that..... • Suppose that, contrary to our claim,..... • We now show that $A$ is closed. Suppose that, on the contrary, there is an $x$..... • Suppose towards a contradiction that..... • We now prove..... Indeed, suppose otherwise. Then..... • Suppose for the moment that $q = 1$, so that $\beta = 1$. • We will argue that $K$ must have maximum rank. Suppose not, meaning that $b(K) < n$.

**suppress** For simplicity, we suppress the explicit dependence on $x$ in the notation. • If $G$ is clear from context, then we suppress reference to it in the notation. • We will work exclusively in the category of standard Borel probability spaces, and so will often suppress mention of their sigma-algebras.

**supremum** [*see also*: maximum] Taking the supremum over all $g$ such that..... we get..... • The measure of $A$ is the supremum of the measures of its compact subsets. • Let $f$ be the supremum of the lengths of the paths thus obtained.

**sure** To be sure we can carry out step $n$, we need to know that.....

**surely** [*see also*: definitely, certainly] The following easy lemma is surely folklore. • We now prove a simple fact about semigroups; it is surely a folklore result. • These upper bounds are too large to be useful in computer calculations in general, but the ideas in the proofs will surely contribute to better bounds in the future. • A formula like (3) surely deserves some explanation. • [Use *surely* to express that you feel sure about something.]

**surject** Since there is no subgroup $H$ of $P$ with $H \cup K = \{1\}$ and surjecting onto $A$, all subgroups in $F$ must be..... •

**surpass** [*see also*: exceed, outnumber] Prewar levels of production were surpassed in 1929.

**surprise** **1** Much to our surprise, even for $k = 1$ the problem proved quite difficult. • It should come as no surprise that a condition like $a_i \neq b_i$ turns up in this theorem.
**2** We were surprised to find out that..... ⟨at finding out that.....⟩ • This is somewhat surprising since..... • In [2] Marx et al. make the surprising observation that the convolution may not even be once differentiable if we replace ‘continuously differentiable’ by ‘differentiable’.

**surprisingly** Not surprisingly, zero sets of sections of such an $L$ are called ample divisors. • The surprisingly neat answer is that the functions (2) span $C(I)$ if and only if $G(a) = 0$.

**survey** [*see also*: overview] **1** For an extensive survey of....., see..... • For a survey of what is known to date, see [G]. • A survey of the research on $f_n(x, y)$ up to 2007 (most of it dealing with the case $n = 1$) was given in [3]. • The survey article [5] by Diestel contains a wealth of information about the Dunford–Pettis property.
**2** We cannot survey this whole subject here. • Other situations in dynamics where the $p$-adic numbers come up are surveyed in [W].

**suspect** **1** Indeed, there is reason to suspect that difficulties could increase with increasing $n$. • We suspect that our methods should extend to offer at least some description of characteristic factor-tuples for larger numbers of commuting transformations. • While we suspect that the methods of the present section can be brought to bear on this question also, we will not pursue this analysis in detail here.
**2** Unfortunately, the details of the calculations were omitted, and there is some doubt on whether the result is correct since our analysis suggests that $P_2$ must vanish to third order; the presence of $L^{-2}$ is also suspect.

**swap** [*see also*: exchange, interchange] Using duality, one can show that $B$ is preserved under swapping $v$ and $v^{-1}$.

**symbol** [*see also*: denote, write, notation] Here $A$, $B$ and $C$ all belong to the same class, which we represent by the symbol $P_2$. • We shall use the symbol $\cap$ to represent intersection. • We call $F$ and $G$ equivalent (in symbols $F \equiv G$) if.....

**symmetry** The symmetry of $G$ about 0 gives..... • By symmetry considerations [= For symmetry reasons], it is sufficient to search over a region in which..... • Up to symmetries, this is the number of induced subgraphs of $G$ that are isomorphic to $H$. • a crystal with hexagonal symmetry

**synthesis** Roughly speaking, we shall produce a synthesis of index theory with Fourier analysis.

**system** The extended real number system is $R$ with two symbols, $\infty$ and $-\infty$, adjoined. • Therefore, the system (5) has a solution of the sought-for type.

**systematic** In Section 2, we lay the foundations for a systematic study of..... • In this paper we wish to renew an interest in the systematic study of the relationships between cardinal invariants with respect to Borel morphisms.

**systematically** There are quite a number of cases, but they can be described reasonably systematically.

## T

**table** Direct verification establishes the other four cases (see the table below).

**tabulate** We tabulate the outcome for $n \geq 10$; in particular, the column headed $R$ lists $R(n)$ truncated to three decimal places. • The smallest (most delicate) values are tabulated below.

**tacit** This sort of tacit convention is used throughout Gelfand theory.

**tacitly** We tacitly assume that..... • Of course, it is tacitly understood that it is this measure that is really under discussion.

**tailor** [*see also*: suit, suitable] In order to tailor the classical theory to suit our needs, we begin with the observation that..... •

**take** [*see also*: address, consider, deal, adopt] One can, for example, take $A$ to be the rationals in $X$. • The parameter interval was here taken to be $(0, 1)$. • Let us take $B$ as our range space. • Take as base for a topology on $X$ the sets of the form..... • The constant $C$ may be taken as double the constant appearing in (5). • Take for $H$ the set..... • Taking $y = x$ we get..... • .....where the sup is taken over all intervals $I$. • It turns out that this is independent of the representations taken (as long as they are faithful). • The map $f$ takes $a$ to $f(a)$. • The map $f$ takes the value 1 for $t = 1$. • The function $g$ takes its maximum at $x = 5$. • The MR algorithm takes $n$ steps to solve the problem. • MAGMA took 399 seconds to compute the covering radius. • Following the same lines we find that it takes $k$ prolongations to get an immersed curve. • We take the same approach as in [3]. • This procedure can be extended to take care of any number of terms. • Let us now take a look at the class $N$, with the purpose of determining how..... • A linear transformation takes us back to the case in which..... • Then (5) takes on the form..... [OR takes the form] • Here $f$ takes over the role of the time parameter. • The first 15 chapters should be taken up in the order in which they are presented, except for Chapter 9, which may be postponed. • First we take up the trivial case $h = 0$. • In closing this section we take up a result which will play a pivotal role in the characterization of.....

**talk** **1** [= lecture] He gave an interesting talk on.....
**2** [*see also*: speak] When we talk of a complex measure, it is understood that $\mu(E)$ is a complex number. • One should remark that the ambiguity alluded to in Remark 3 disappears when talking about an affine field. • Thus, we may unambiguously talk about the homotopy type of the complex.

**tantamount** [to sth; *see also*: equivalent] Point (ii) is tantamount to showing that factorizations behave well under multilinear interpolation.

**task** [*see also*: objective, aim] We can accomplish both tasks by showing that..... • The task is now to obtain..... • Solving it in a general setting is a complicated task. • Although individually these systems can still be quite complicated, a possibly more tractable task is to describe their possible joint distributions. • Theorem 2 can only give sharp results if one is able to construct a nearly optimal sequence of nets $T_n$, a task that is significantly complicated by the multiscale nature of $\gamma_2(T)$.

**technical** First, we establish a technical point already alluded to in Section 3. • The definition is stated in terms of local martingales, rather than martingales, for the technical reason that the former are easier to characterize in applications. • Apart from a few embellishments necessitated by some technical difficulties, the ideas differ very little from those used to prove Lemma 4.

**technicality** This condition may seem unnatural, but it simplifies some of the technicalities of the proof. • In order to bypass some technicalities, we also assume that..... • Here the functional-analytic tools required are simpler, but this easier setting allows us to develop some methods without undue worry about technicalities.

**technique** [*see also*: approach, method, procedure, way] His techniques work just as well for general $v$. • However, for these techniques to succeed, not only must one variable of (3.1) be free to take on any colour, but it is also necessary for the solution set to possess a well-factorable parametrization, allowing for the theory of multiplicative functions to come into play. • The technique is the same as in the proof of..... • The argument is now completed by means of techniques originated in the work of Stolz [3]. • We encourage the reader unfamiliar with techniques from the theory of..... to consult [BS]. • A second technique for creating new triangulations out of old ones is central retriangulation. • Herz's technique for showing that $A_p(G)$ is an algebra lifts naturally to $N^p(G)$.

**technology** Although our proof is a little tedious, it is much less so than Ito's original proof, which was carried out without the benefit of martingale technology.

**tedious** [= long and uninteresting] The proof is tedious but routine. • Although our proof is a little tedious, it is much less so than Ito's original proof, which was carried out without the benefit of martingale technology. • Kim announces that (by a tedious proof) the upper bound can be reduced to 10. • The only thing to check is that maps compose correctly; but this is an easy, if tedious, verification.

**tell** [*see also*: say, assert, state, determine, decide] A direct application of Theorem 4 only tells us that..... • From the theory so far, we cannot tell if all four points are in the same Nielsen class. • To tell whether a labelled partial order is a skeleton, it suffices to look at its substructures of size at most three.

**temporarily** [*see also*: moment] Temporarily assuming that $E$ is positive, we multiply.....

**temporary** [*see also*: provisional, ad hoc] Let us introduce the temporary notation $Ff$ for $gfg$.

**tempt** It is also tempting to get round this problem by working with..... • One is tempted to reverse the order of integrations but that is illegitimate here. • Having established (1), one might be tempted to try to extend this result to general $p$ through the choice of a suitable ideal $B$. Alas, as we shall see now, this attempt is futile.

**temptation** However, we must resist this temptation since $L^\infty$ is not separable.

**tend** [*see also*: converge, approach] Clearly, $F_n$ tends to zero as $n \to \infty$. • Observe that as $I$ becomes smaller, $d(I, f)$ tends to 1.

**tentative** [= cautious, not firm] However, a few tentative conclusions can be drawn.

**term** **1** [*see also*: name, notion, word, language] So all the terms of (2) are accounted for, and the theorem is proved. • This term drops out when $f$ is differentiated. • Each of the terms that make up $G(t)$ is well defined. • Thus uniformly convergent series can be integrated term by term. • This theorem accounts for the term 'subharmonic'. • The term 'upath' is a mnemonic for 'unit speed path'. • The answer depends on how broadly or narrowly the term 'matrix method' is defined. • The above definition was first given in [D]; care is required because this term has been used in a slightly different sense elsewhere. • The $z$-component can be expressed in terms of the gauge function. • Our aim here is to give some sort of functorial description of $K$ in terms of $G$. • This can be easily reformulated in purely geometric terms.
**2** [*see also*: call, designate, name] Garling has introduced a more general class of martingales, termed Hardy martingales. • We derive Theorem 3 by an induction on the number of colours, in combination with a density result concerning what we have termed *homogeneous sets*.

**terminate** [*see also*: end] a path terminating at $x$

**terminology** [*see also*: nomenclature] In order to state these conditions succinctly, we introduce the following terminology. • In Section 2 we set up notation and terminology. • In discussing structures, we shall employ the standard terminology of first-order logic. • This terminology is used slightly differently in [6]. • This is slightly at odds [= inconsistent] with the terminology of [4], as Fox defines the trace filter to be the normal filter generated by $A$. • In the terminology of Herz, (b) below is the condition of being "formally of compact support".

**test** [*see also*: examine, check, investigate] The property $f(U) = V$ can be tested by examining the behaviour of..... • Computing $f(y)$ can be done by enumerating $A(y)$ and testing each element for membership in $C$. • We now test equation (6) with the function $F$ to obtain..... • We test this on the characteristic function associated to $M$.

**text** Chapter 2 of the classic text [6] by R. Nevanlinna has a detailed treatment of this construction. • In most texts (for example, see [3]), a "Banach lattice" is based on a real Banach space.

**than** Now $F$ is greater than or equal to $G$. [NOT "greater or equal to $G$", "greater or equal $G$", nor "greater or equal than $G$"] • The point is that the operator is now much easier to analyse than is the case in the original setting of the space $B$. • Part of the conclusion is that $F$ moves each $z$ closer to the origin than it was.

**thank** The author thanks H. Miller for a careful reading of an earlier draft. • We thank the referee for recommending various improvements in exposition. • (We thank Erik Lund for supplying this argument.) • It is a pleasure to thank R. Greenberg for bringing his criterion for..... to our attention, and for generously sharing his ideas about it. • We thank Jacob Hicks for his substantial computational aid.

**thanks** **1** Mary Lane deserves our special thanks for her part in bringing this volume to a successful completion. • The referee deserves thanks for careful reading and many useful comments. • We would like to express our thanks to all of these institutions for their hospitality and support.

**2** Thanks to Lemma 2, we can now modify the proof of Theorem 3 by inductively constructing five sequences.....

**that** [*see also*: which, namely] That (2) implies (1) is contained in the proof of Theorem 1 of [4]. • Clearly, $A_\infty$ weights are sharp weights. That there are no others is the main result of Section 2. • The degree of $P$ equals that of $Q$. • The continuity of $f$ implies that of $g$. • The diameter of $F$ is about twice that of $G$. • It is this point of view which is close to that used in $C^*$-algebras. • Define $f(z)$ to be that $y$ for which..... • Where there is a choice of several acceptable forms, that form is selected which additionally satisfies..... • Associated with each Steiner system is its automorphism group, that is, the set of all..... • The usefulness and interest of this correspondence will of course be enhanced if there is a way of returning from the transforms to the functions, that is to say, if there is an inversion formula. • We now state a result that will be of use later. • A principal ideal is one that is generated by a single element. • Let $I$ be the family of all subalgebras that contain $F$. [OR which contain $F$; you can use either *that* or *which* in defining clauses.]

**the** Note that the $P$ produced in Theorem 2 need not have $dP = 0$. • .....where the $P_k$ are polynomials. • We characterize the Banach spaces $X$ for which $n(X) = 1$. • Thus $\pi_n(X)$ can be interpreted as the homotopy classes of maps $S^n \to X$. [= as the set of all homotopy classes] • It has some basic properties in common with another most important class of functions, namely, the continuous ones. • In the plane, the open sets are those which are unions of open circular discs. • Since $u$ is constant on the level sets of $a$, it follows that..... • the number of zeros of $f$ in $D$ • the density of the zeros of $f$ • Let $A$ be the union of the sets $f(Q)$ for $f$ in $F$. • Let $f$ be the supremum of the lengths of the paths thus obtained. • Here $p_2(r)$ is the sum of the squares of the divisors of $r$. • The problem has a very natural connection with the problem of the distribution of the zeros of a bounded holomorphic function in a half-plane. • Intuitively, entropy of a partition is a measure of its information content—the larger the entropy, the larger the information content.

**theme** [*see also*: subject, topic] We shall return to this central theme in Section 4.

**then** The complex case then follows from (a). • Continuity then finishes off the argument. • Theorem 3 may be interpreted as saying that $A = B$, but it must then be remembered that..... • Then $G$ has 10 normal subgroups and as many non-normal ones. • If $p = 0$ then there are an additional $m$ arcs. [Note the article *an*.] • If $y$ is a solution, then $ay$ also solves (3) for all $a$ in $B$.

**theorem** Here is a more explicit statement of what the theorem asserts. • What the theorem is saying in substance is that..... • This theorem accounts for the term 'subharmonic'. • Theorem 2 will form the basis for our subsequent results. [NOT "The Theorem 2"] • In particular, the theorem applies to weakly confluent maps. • Finally, case (E) is completed by again invoking Theorem 1. • At this stage we appeal to Theorem 2 to deduce that..... • Brown's theorem [without *the*] = the Brown theorem • according to a theorem of Brown's [= one of Brown's theorems] • ....., which, by another theorem of Kimney's, is more than enough to guarantee that $P$ gives $A$ outer measure 1. • Wiener's famous ⟨renowned/celebrated⟩ theorem

**theoretic** Throughout this paper embeddings and substructures will be understood in the usual model-theoretic sense (see, e.g., Hodges [Ho]). • Despite its formulation below, the next fact is purely graph-theoretic in nature.

**theory** In [2], this theorem is made the starting point of Gelfand theory. • This approach is standard in homotopy theory. • Unfortunately, the notation from number theory slightly conflicts with the notation from probability theory. • More specialized notions from Banach space theory will be introduced as needed. • This abstract theory is not in any way more difficult than the special case of the real line. • Kearnes developed a commutator theory for relative congruences, with the expectation that it can be used to prove Pigozzi's conjecture.

**there** Theorem 2, at the end of Section 2, was not originally obtained in the manner indicated there. • That approach was used earlier in [2]. There, however, it was applied in simply connected regions only. • This shows that there is $r \geq 0$ such that..... [OR there is an $r \geq 0$] • Now, there are $a$ and $b$ such that..... • There exists a function $f$ and a constant $c$ such that..... [OR There exist a function $f$ and a constant $c$] • However, there are a large number of examples showing that..... [NOT "There is a large number"] • If $p = 0$ then there are an additional $m$ arcs. [Note the article *an*.] • We have to show that the property of there being $x$ and $y$ such that $x < y$ uniquely determines $P$ up to isomorphism. • Then (3.5) is a necessary and sufficient condition for there to be a function $f$ such that..... • How many such expressions are there? • How many entries are there in this section? • In general, we have $a \leq b$; there is equality if..... • There has recently been increasing interest in the theory of..... • There is not space to enumerate them all here. • From the viewpoint of the Fox theorem, there is not an exact parallel between the odds and the evens. • For general linear operators, there is not such an extensive functional calculus as there is for self-adjoint operators. • Hence there can be no condition on the norms which guarantees (7). • In representation theory, there can never be a $B$-map whose domain is finite-dimensional. • There cannot be two edges between one pair of vertices. • With each $D$ there is associated a region $V_D$. • There remain four intervals of length $1/4$ each. • There remains one further case to consider. [BUT It remains to consider one further case.] • In [6] there occur the following formulas. • There seems to be no simple formula for .....

**thereafter** [= after that time] This procedure, once implemented, can thereafter be applied with great effectiveness. • Shortly thereafter, Epstein [5] generalized Chekanov's result to show that.....

**thereby** [= as a result of that] Clearly, $A$ is thereby put in one-to-one correspondence with $B$. • So $F$ must be constant on $H$, thereby showing that $A = B$, as desired. • Let $\beta$ be the maximum distance thereby obtained.

**therefore** [= for that reason; *see also*: consequently, hence, thus] It is therefore of interest to look at..... • The polynomials $R_i$ do not have this stability property, and are therefore of little interest. • One must therefore also introduce the class of..... • Therefore, whenever it is convenient, we may assume that.....

**therein** For the one-dimensional case see [1, 14, 24] and ⟨the⟩ references therein. • Those readers familiar with [AB] should be cautioned that many of the definitions for families therein simplify in the case of filters.

**thereof** Recall that this is isomorphic either to $A_2$, or else (in certain cases in type D) to an index-2 subgroup thereof.

**these** In this way, $D$ yields operators $D^+$ and $D^-$. These are formal adjoints of each other. • The best known of these is the Knaster continuum. • One of these lies in the union of the other two. • We refer to these as homogeneous Sobolev spaces. • Each of these three integrals is finite. • We begin by constructing a function $f$ which has these prescribed zeros.

**thesis** [= dissertation] This was finally settled in Siebenmann's thesis. • [Do not write "the thesis of Theorem 3" if you mean *the assertion/conclusion of Theorem 3.*]

**thick** The picture on the right shows the dividing line $\alpha$, drawn thick.

**thickly** Number the successive segments of the boundary line between $A$ and $B$ (marked thickly in the picture) with the numbers $0, 1, ..., n$, starting at the bottom.

**thing** [*see also*: point, matter] Thus A-equivalence and B-equivalence are the same thing. • The only thing to check is that maps compose correctly; but this is an easy, if tedious, verification. • When $r > 3$ things become much more difficult. • We begin by showing that $\alpha$-collections and $\beta$-collections are quite different things. • The next corollary shows among other things that..... [NOT "among others"]

**think** [*see also*: view, regard, consider] If one thinks of $x, y$ as space variables and of $z$ as time, then..... • It may help to think of $F$ as being a smooth approximation to the Heaviside function. • This result may be thought of as a sort of regularity theorem. • So $s$ can be thought of as $q$ with $F^q$ extended but $X^q$ left the same.

**third** The budget has increased by more than a third. • The algorithm examines only roughly one-quarter to one-third of the characters. • Each tree is about two-thirds as deep as it was before. • Let $E$ be Cantor's familiar middle thirds set.

**this** [*see also*: it] This is because the factor $M$ satisfies..... • This is why no truncation is required here. • (This is where the local convexity of $E$ is needed.) • This says that the real part of $g$ is..... • We shall assume that this is the case. • For $K$, this is no longer true. [*Compare*: For $K$, it is no longer true that.....] • In order to justify this, we now show that..... • We leave this as an exercise. • In this and the other theorems of this section, the $X_n$ are any independent random variables with a common distribution. • In more detail, the assertion is this: if..... • Adding over $n = 0, 1, ...$ leads to this result:..... [= to the following result]

**thorough** [*see also*: extensive, complete, depth, detail] For a thorough treatment of..... we refer the reader to Section 5 of [Ho].

**those** Those more than half a square count as whole ones. • Using (2) and following steps analogous to those above, we obtain..... • Our results are closely related to those of Strang [5]. • These intervals are disjoint from all those used in defining $J_1$. • In the plane, the open sets are those which are unions of open circular discs. • We define the set $T$ to consist of those $f$ for which..... • Now $A$ consists of those vectors with eight 2s. • It is easy to see that the extreme points of the unit ball $M(\Omega)_{[1]}$ are those measures of the form $\zeta\delta_x$. • Keep only those vertices whose coordinates sum to 4.

**though** [*see also*: although, but, albeit] The sum in (2), though formally infinite, is therefore actually finite. • For our application though, we need a stronger statement. • Even though we were able to derive a formula for $f(x)$, it is not easy to use. • The fact that the number $T(p)$ is uniquely defined, even though $p$ is not, enables us to define the nullity of $A$ as follows.

**three** [*see also*: two] The three groups have the same number of generators. [= Those three groups; NOT "The 3 groups"; the numbers 1 to 12, when used for counting objects (without units of measurement), should be written in words.] • We now define three more groups of interest. • We have thus found another three solutions of (5). [= three more]

**through** [*see also*: throughout] Note that $T(g)$ depends on $g$ only through its differential $dg$. • Then $T$ tends to zero only through positive values. • Most distribution spaces can be characterized through the action of appropriate convolution operators. • Through an appeal to (5.3) we have..... • Having established (1), one might be tempted to try to extend this result to general $p$ through the choice of a suitable ideal $B$. • rotation through $\pi/3$ [= rotation by $\pi/3$] • rotation through an angle $\theta$ • Exercises 2 through 5 (*amer.*) [= Exercises 2 to 5, Exercises 2–5] • We now go through the clauses of Definition 3. • As $t$ runs from 0 to 1, the point $f(t)$ runs through the interval $[a, b]$. • The next result is really a repackaging of the main result of Cowling [6], and is used extensively through the rest of this note. [= throughout] • The rest of the proof goes through as for Corollary 2, with hardly any changes. • There are kneading sequences for which the arguments of Section 4 go through routinely. • This allows the proof of the continuity of $G$ to go through as before. • Multiplying through by $f$ and integrating shows that..... • This assumption enables us to push through the same arguments. • rotation through $\pi/3$ [= rotation by $\pi/3$] • rotation through an angle $\theta$

**throughout** [*see also*: through] We adopt throughout the convention that compact spaces are Hausdorff. • Here and throughout, $P(E)$ denotes..... • Throughout integration theory, one inevitably encounters $\infty$. • Throughout what follows, we shall freely use without explicit mention the elementary fact that..... • The letter $\chi$ will be reserved for characteristic functions throughout this book. • Then $a \leq b \leq c \leq a$. We therefore have equality throughout.

**thus** [*see also*: consequently, follow, hence, so, therefore] It will thus be sufficient to..... [= therefore] • The function thus defined is a semigroup morphism. [= in this way] • Let $f$ be the supremum of the lengths of the paths thus obtained. • Once this is done, the proof continues thus:..... [= in the following way] • However, we have thus far been unable to find any magic squares with seven square entries.

**tie** [*see also*: connect, link, relate] Besides their possible role in physics, the octonions are important because they tie together some algebraic structures that otherwise appear as isolated and inexplicable exceptions.

**tilde** Generally we add a tilde to distinguish between quantities associated with $\tilde{G}$ and those associated with $G$.

**time** [*see also*: moment, simultaneously] an impulse acting at time $t = 0$ • This path stays in $B$ for all time. • This can be performed in $O(n)$ time. • The problem is to move all the discs to the third peg by moving only one at a time. • The squarefree condition can again be checked one $p$ at a time. • At times [= Occasionally] it will be useful to consider..... • We prove both lemmas at the same time. • At the time of writing [5], I was not aware of this reference. • We tried to prove Theorem 1 when writing [BG] but had insufficient tools at the time. • It has been known for some time that..... • But this time boundedness on $U$ is enough; we do not need continuity on $V$. • Then $A$ has three times as many elements as $B$ has. • The integral of $F$ is $r$ times the sum of..... • Thus $X$ has $r$ times the length of $Y$. • The diameter of $A$ is three times that of $B$. • Clearly, $F$ is $r$ times as long as $G$. • Applying this argument $k$ more times, we obtain..... •

.....where $z^k = z...z$ ($k$ times) • Let $K$ be the number of times that $z$ returns to $B$. • Repeating this procedure enough times gives the desired triangulation.

**to** Denote by $\theta$ the angle at $x$ that is common to these triangles. • The following lemma, crucial to Theorem 2, is also implicit in [4]. • Knowing this matrix is equivalent to knowing the multiplicities of the $l_i$. • Thus $\theta$ will be less than $\pi$ by an amount comparable to $a(s)$. • Essential to the proof are certain topological properties of $G$. • We shall see later that the values of $h(n)$ for large $n$ are irrelevant to the problem. • We base our development on two properties of prolongation peculiar to this case. • But the $T_n$ need not be contractions in $L^1$, which is the main obstruction to applying standard arguments for densities. • We write $\beta =$ ....., which is a slight modification to the previous version of $\beta$. • We can join $a$ to $b$ by a path $\pi$. [NOT "join $a$ with $b$"] • The case where $i$ is odd yields to a similar argument. • Exercises 2 to 5 [= Exercises 2–5; *amer.* Exercises 2 through 5] • To deal with (3), consider..... • We now apply (2) to get $Nf = 0$. • Theorems 1 and 2 combine to give the following result. • To see that $f = g$ is fairly easy. • Every prime in the factorization appears to an even power.

**together** [*see also*: combine, conjunction] Now (2) and (3) together are equivalent to (4). • Together with Lemma 4, this implies that..... • It follows from this representation together with Lemma 3 that..... • ....., which, together with (2), shows..... • The aim of this paper is to bring together two areas in which..... • These volumes bring together all of R. Bing's published mathematical papers. • The key part is to show that the submanifolds $U_k$ fit together to form a complex submanifold. • There is a natural way to glue the associated varieties together along their common boundary. • We now pull all the computations above together to get..... • Besides their possible role in physics, the octonions are important because they tie together some algebraic structures that otherwise appear as isolated and inexplicable exceptions.

**too** [*see also*: also, well, similarly, likewise] In practice, $D$ is usually too large a set to work with. • Consequently, $A$ has two elements too many. [OR $A$ has two too many elements.] • There are other problems with this example which would hinder any attempt to follow the proof given here too closely. • We denote this, too, by $Q$. • Note that this too is best possible. • Here $A = B$, so the same conclusion holds in this case too. • The inner sum is zero (and so too is $S(a, b)$). • If (1) and (2) hold, then so too does (3).

**tool** [for sth; for/in doing sth] This is the essential tool in proving Theorem 5. • These idempotents provide a useful tool for analysing the structure of $G$. • In this paper we offer some useful tools for bounding $d$-pseudoprimes. • The abstract theory gives us a tool of much wider applicability. • A further tool available is the following classical result of Chen. • We tried to prove Theorem 1 when writing [BG] but had insufficient tools at the time.

**top** [*see also*: bottom, upper] at the top of page 4 • near the top of the scale • the top row • the top right-hand corner • Combining this with the attaching map defined above, we obtain the commutative diagram..... where surjectivity of the top-left arrow follows from the fact that..... • We now start piling the pieces on top of each other. • In Figure 2, the set $A$ is marked by a square with a small triangle on top.

**topic** [*see also*: theme, subject, matter, point, issue] This topic has been dealt with by many authors. • Another topic of great interest is how much of adjunction theory holds for ample vector bundles.

**total** **1** [*see also*: all, altogether] There are $N$ vertices of the 24-cube which have a 1 in the $i$th coordinate and a total of five 1s. • This makes a total of 170 elements adjacent to $A$. • There are twelve indecomposables in total.
**2** [*see also*: whole, complete, entire, full] The total number of such vectors is 88. • The total amount of information lost is.....
**3** [*see also*: add up, amount] The angles of a triangle total 180. • Subsidies on these commodities total 25 per cent of the budget.

**touch** [*see also*: refer, mention, allude] We shall touch only a few aspects of the theory.

**towards** [= toward] Suppose, towards a contradiction, that..... • The vector field $H$ always points towards the higher $A$-level. • We now work toward the establishment of properties (A) to (D).

**trace** This idea can be traced back to an 1882 paper of Klein.

**track** [*see also*: find] Both theorems appear to be folklore—see Cowling [11]—but we have been unable to track down complete proofs.

**tractable** However, with the recent advent of simulation based inference, the need for analytically tractable posteriors is no longer critical. • Although individually these systems can still be quite complicated, a possibly more tractable task is to describe their possible joint distributions. This conjecture also appears intractable at present.

**transfer** **1** [*see also*: passage, transition] Section 6 contains a formula which permits transfer of the results in Section 2 to sums of independent random variables.
**2** [*see also*: move] In this case it is advantageous to transfer the problem to (say) the upper half-plane. • We now transfer the above analysis back to $M(A)$. • Hence the action of $G$ on $A$ transfers, via $f$, to an action on $B$.

**transform** **1** The Fourier transform converts multiplication by a character into translation, and vice versa, it converts convolutions to pointwise products. • The usefulness and interest of this correspondence will of course be enhanced if there is a way of returning from the transforms to the functions, that is to say, if there is an inversion formula.
**2** [sth into sth; *see also*: alter, change, convert, make into, modify] Replacement of $z$ by $1/z$ transforms (3) into (4).

**transformation** [*see also*: mapping, function] After making a linear transformation, we can assume..... • A linear transformation brings ⟨takes⟩ us back to the case in which..... • If this is not so, a linear fractional transformation will make it so. • We also show the existence of $E$-transformations exhibiting nearly the full range of behaviours possible for scaling transformations. • Then $X$ is a nonempty, compact, convex set of measures on which $G$ acts continuously by affine transformations.

**transition** [*see also*: passage, transfer] Then we shall use (2.3) in order to make the transition from $M$ to a universal Turing machine $U$.

**translate** **1** It suffices to take a suitable translate of $U$. • These $n$ disjoint boxes are translates of each other.
**2** [into sth] Section 2 then translates the results into equivariant cohomology. • This can be translated into the language of differential forms.

**translation** The Fourier transform converts multiplication by a character into translation, and vice versa, it converts convolutions to pointwise products. • The tangent space to $N$ at $x$ is identified with $M$ via left translation. • By suitable translation of variables in (5), we may arrange that $k =$..... [NOT "By adequate translation"] • This set is clearly translation invariant.

**transpire** [*see also*: turn out] It transpires that $F$ is not necessary here. [= It turns out]

**treat** [*see also*: consider, deal, discuss, present, handle] This subject is treated at length in Section 2. • In the present paper we move outside the random walk case and treat time-inhomogeneous convolutions. • The approach in [GT] provides a unified way of treating a wide variety of seemingly disparate examples.

**treatment** [*see also*: consideration, discussion, study] For a thorough treatment of..... we refer the reader to Section 5 of [Ho]. • For a comprehensive treatment and for references to the extensive literature on the subject one may refer to the book [M] by Markov. • An extensive treatment of the $h$-principle can be found in [6]. • It is beyond the scope of this paper to give a complete treatment of..... • While the first version was being refereed, I found that Zhang [2] had given a similar treatment of $E_n(X)$. • Chapter 2 of the classic text [6] by R. Nevanlinna has a detailed treatment of this construction. • The first of these was suggested by J. Serrin, who showed how to modify my earlier treatment of $J(X)$ so as to obtain stronger results with no extra effort. • We could have adopted an approach to proving Theorem 2 along a line of reasoning which bears greater resemblance to the treatment of the analogous result in Section 1. • The gradient flow case is more amenable to analytical treatment because.....

**trial** [*see also*: attempt] A solution will be found by a process of trial and error.

**trick** [*see also*: subterfuge] In fact, there is a trick which enables one to reduce the time dependent case on $R^n$ to the time independent case on $R^{n+1}$. • The same trick reduces matters to studying the functions $f_i$.

**trivial** The trivial cases when the family consists of only one set are excepted. • First we take up the trivial case $h = 0$. • We may assume that not all distances in $X$ are equal as the result is trivial otherwise (though our proof still works). • If there are to be any nontrivial solutions $x$ then any odd prime must satisfy..... • It is generally a highly nontrivial question whether.....

**triviality** To avoid trivialities, we shall assume that.....

**trivially** The equivalence of (a) and (b) is trivially implied by the definition of $M$. • The estimate is trivially true if $A = B$. • The desired inequality holds trivially whenever $A > 0$.

**trouble** [*see also*: complication, difficulty, problem] Now the reader will have no trouble verifying that.....

**true** [*see also*: correct, valid, hold] The conjecture (now known not to be true in general) was that..... • In other algorithms, this may not be true. • Unfortunately, because of the possible presence of 'cusps', this need not be true. • This is not true of $F$. [OR for $F$] • This works regardless of whether $B$ is true or false. • Let us now take a quick look at the class $N$, with the purpose of determining how much of Theorems 1 and 2 is true here. • This suggests a question: under what conditions is it true that.....? • Only in exceptional circumstances is it true that $f(x + y) = f(x) + f(y)$. [Note the inversion.]

**truncate** We tabulate the outcome for $n \geq 10$; in particular, the column headed $R$ lists $R(n)$ truncated to three decimal places.

**truth** It would be interesting to investigate further which result is closer to the truth. • We will finish this section by offering a second application of our machinery (although in truth it is largely a corollary of the above).

**try** [to do sth; doing sth; *see also*: attempt, effort, seek] In the remainder of this section we shall be trying to answer the question:..... • We shall try to give it the simplest representation possible. • Having established (1), one might be tempted to try to extend this result to general $p$ through the choice of a suitable ideal $B$. • In Section 3 we obtain some results that we discovered in the process of trying to prove Theorem 2. • Some researchers have also tried investigating the growth rate of $s_n$ numerically.

**turn** **1** [*see also*: rotation] A turn through $\pi/3$ restores the position of the needle. • The algorithm compares $x$ with each entry in turn until a match is found or the list is exhausted. • The orbits of $H$ on $B$ are unions of orbits of $N$ on $G$, which in turn are orbits of $N$ on $G_1$, $G_2$ and $G_3$.
**2** [*see also*: proceed, change into, make into, transform, appear, go back, transpire] We now turn to a brief discussion of another concept which is relevant to John's theorem. • We now turn to estimating $Tf$. • Implementation is the task of turning an algorithm into a computer program. • We turn the set of..... into a category by defining the morphisms to be..... • We now turn back to our main question. • It turns out that $A$ is not merely symmetric, but actually selfadjoint. • This condition also turns out to be necessary. • However, this equality turned out to be a mere coincidence. • Our main finding in this paper is that this intuition turns out to be erroneous. • It should come as no surprise that a condition like $a_i \neq b_i$ turns up in this theorem. [= appears]

**twice** [*see also*: double] The curve $C$ encircles the origin twice. • The diameter of $F$ is about twice that of $G$. • Let $2I$ denote the interval concentric with $I$ but of twice its length. • Any point not in $B$ is moved by $f$ a distance equal to twice the distance to $M$.

**two** [*see also*: three] The player has to decide which of the two strategies is better for him and act accordingly. [NOT "the 2 strategies"; the numbers 1 to 12, when used for counting objects (without units of measurement), should be written in words.] • The first two are simpler than the third. [OR the third one; *not*: "The first two ones"] • One of these lies in the union of the other two. • the last two rows • the following two maps • a two-variable characterization

**twofold** Then $P$ covers $M$ twofold. • The motivation for writing this paper was twofold.

**two-thirds** The sum of the depths is at most two-thirds of what it was before. • Each tree is about two-thirds as deep as it was before.

**type** [*see also*: kind, sort, form] A function exhibiting this type of behaviour has been constructed in [9]. • As is often the case with this type of sum, we can simplify our argument by taking advantage of multiplicativity. • It became clear that the Riemann integral should be replaced by some other type of integral, better suited for dealing with limit processes. • Section 2 presents two $L^1$-type characterizations. • Then $A$ is an algebra of type II. • All of the action in creating $S_{i+1}$ takes place in the individual cells of type 2 or 3. • It is a simple matter to remove all type 1 edges. • Therefore, the system (5) has a solution of the sought-for type. • for all $f$

of the type specified in Theorem 4 • Plugging these into (6) and grouping the elements of $S$ together by type, we can use (16) to deduce that.....

**typical** [of sth; *see also*: characteristic] This fact is typical of diffraction.

**typically** A computational restraint is the algebraic number theory involved in finding these ranks, which will typically be more demanding than in our example of Section 1. • While nonparametric priors are typically difficult to manipulate, we believe the contrary is true for quantile pyramids. • Here one typically takes $E$ to lie in the subspace $H$.

## U

**ultimate** [*see also*: eventual, final] Our ultimate objective is to eliminate this assumption completely.

**unable** Both theorems appear to be folklore—see Cowling [11]—but we have been unable to track down complete proofs.

**unaffected** [*see also*: unchanged] The right hand side of (3) is unaffected if we replace $H$ by $G$. • Properties involving topological centres are unaffected by a change to an equivalent weight. • If $a$, $b$, and $c$ are permuted cyclically, the left side of (2) is unaffected.

**unambiguous** Note that while the degree of a morphism may not be unique, the notion of having degree $k$ for a fixed $k$ is unambiguous.

**unambiguously** [*see also*: uniquely] Formula (9) defines $F(n)$ unambiguously for every $n$. • Thus, we may unambiguously talk about the homotopy type of the complex.

**unanswered** [*see also*: open, unresolved] The two questions listed below remain unanswered. • As an application of Theorem A, in Section 2 we settle a question left unanswered in [3].

**unaware** [*see also*: know] In 1925 Franklin, unaware of Stackel's work, showed..... • There are, however, a few important papers of which we were unaware until fairly recently. • However, we are unaware of any counterexample to the following conjecture:.....

**unchanged** [*see also*: unaffected] The limit in 4(b) is unchanged if $g$ is replaced by $f$. • Figures 2 and 3 are unchanged by reflecting about the vertical axis.

**unclear** However, it is unclear how to prove Corollary 3 without the rank theorem.

**under** Under what conditions can $f$ have a local minimum in $A$? • Then $X$ is a Banach algebra under convolution multiplication ⟨under this norm⟩. • It follows that $G$ is maximal under ⟨for⟩ the usual partial ordering of $B$. • Hence $F$ is invariant under $\phi$. [= $\phi$-invariant] • the image of $A$ under $f$ = the $f$-image of $A$ • The point $x$ maps to $\infty$ under $f$. • This class includes just under 3000 items.

**undergo** The shape of $F$ undergoes radical changes as $x$ moves from $A$ to $B$.

**underlie** [*see also*: basis, foundation] It is this idea that underlies some of the results of [2]. • The condition..... can be improved by employing a strategy similar to that underlying the proof of Theorem 2. • This exemplifies a well-used philosophy in Ramsey theory that underlying every partition result there is some notion of largeness. • The semidirect product of $H$ and $G$ has $H \times G$ as its underlying set. • All our results hold independently of whether the underlying field is $R$ or $C$. • We underline that the aforementioned results in [1] all rely on the conformality of the underlying construction.

**underline** [*see also*: emphasize, stress, underscore, highlight] We underline that the aforementioned results in [1] all rely on the conformality of the underlying construction. • This underlines the importance of the Bass conjecture.

**underscore** [*see also*: emphasize, stress, underline, highlight] Our purpose is to underscore the analogy with the $C^0$ case.

**understand** [*see also*: mean, know, realize, recognize, grasp] When we talk of a complex measure, it is understood that $\mu(E)$ is a complex number. • The first equality is understood to mean that..... • The ideal is defined by $m =$....., it being understood that..... • Presumably better results could be obtained by studying the obvious analogue of....., but for $l$ not prime this is poorly understood. • To understand why, let us remember that..... • By *quasi-equation* we understand a sentence of the form.....

**understanding** Our development will require a detailed understanding of cozero covers. • Thus it is reasonable to attempt, using this homeomorphism, to gain an understanding of the structure of $M$. • It is hoped that a deeper understanding of these residues will help establish new results about the distribution of modular symbols. • This interpretation does little, in sum, to add to our understanding of.....

**undertake** In [7] the authors undertook a detailed study of.....

**undesirable** However, if $B$ were omitted in (1), the case $n = 0$ would imply $Nf = 1$, an undesirable restriction.

**undoubtedly** This undoubtedly has to do with the assumption about the growth of $f$.

**unfortunately** [*see also*: alas] Unfortunately, this is rarely the case. • Unfortunately, the notation from number theory slightly conflicts with the notation from probability theory.

**uniform** To handle the three cases in a uniform way, it is convenient to..... • Our interest here is in estimates which are uniform in $q$ for as large a range as possible.

**uniformly** Then $F_n(x, y)$ converges to $F(x, y)$ uniformly in $x$. • One must also be aware that the curvature of $M_i$ might not be bounded uniformly in $i$. • Since we choose $n$ uniformly in $Z$, it is even half of the time and odd half of the time. • Hence, although the topology of reducts of $A$ is uniformly controlled, so to speak, by that of $A$, the model theory of the reducts can be much wilder.

**unify** Very recently, Heck introduced a general approach that unifies and extends all these results. • The approach in [GT] provides a unified way of treating a wide variety of seemingly disparate examples.

**unimportant** [*see also*: irrelevant] These extra stipulations are unimportant, but are given for definiteness.

**union** Thus $A$ is the union of all the sets $B_x$. • We have thus proved that $B$ is the union of a collection of balls. • Thus $A$ is the union of $B$ plus an at most countable set. • One of these lies in the union of the other two. • There are $n$ continua in $X$ the union of whose images under $f$ is $K$. • Let $A_i$ be disjoint members of $M$ whose union is $E$. • Every open set is a union of balls. • In the plane, the open sets are those which are unions of open circular discs. • If (ii) is required for finite unions only, then $M$ is called an algebra of sets.

**unique** [*see also*: single, only] To every $F$ there corresponds a unique $G$ such that..... • This equation has a unique solution for every $p$. • Then $F$ has a unique lift $F'$. • Therefore, $F$ has the unique lift $F' = p^{-1}F$. • Let $F$ be the unique map such that..... • Hence $M$ is the unique largest submodule of type (a).

**uniquely** [*see also*: unambiguously] This normalization determines $V$ uniquely. • Then $G$ is uniquely determined up to unitary equivalence. • The fact that the number $T(p)$ is uniquely defined, even though $p$ is not, enables us to define the nullity of $A$ as follows.

**uniqueness** Uniqueness of factorization gives a short exact sequence..... • To establish uniqueness, suppose..... • The uniqueness of $f$ is easily proved, since..... • As usual, we can rephrase the above result as a uniqueness theorem.

**unit** The $m$ points $x_1, \dots, x_m$ are regularly spaced $t$ units apart. • an interval of unit length • the unit mass concentrated at $x$ • an algebra with unit • the units digit

**unity** The coefficients of $A$ add up to unity.

**university** He graduated from Warsaw University in 1951. • After receiving his PhD he took a position at ⟨he came to⟩ the University of Texas. • He received his master and PhD degrees from the University of Texas. • In 1987 he went to Delhi University. • He is currently Professor of Mathematics at Texas State University. • This research was initiated when the first author was visiting the University of Alberta in the summer of 2008; the financial support and kind hospitality are gratefully acknowledged.

**unknown** For example, it is unknown whether $K$ can be constructed as the union of two intervals in the $S^1$ case.

**unless** We now prove that $f$ cannot have compact support unless $f = 0$ a.e. • We put $b$ in $R$ unless $a$ is already in. • The $S$-function $f$ is zero unless $l = m$, in which case it depends only on $M$.

**unlike** [*see also*: contrast, oppose] Note that, unlike the maximal function, the Hilbert transform is not..... • Unlike Bell's method, Hall's does not use transfinite induction. • Unlike the case with designs, there exist weak designs where the universe size does not depend on the number of sets.

**unlikely** This change is unlikely to affect the solution. • We drop the subscript when confusion is unlikely. • It is unlikely that the disturbances will eventually disappear.

**unnecessarily** His proof is unnecessarily complicated.

**unnecessary** [*see also*: superfluous, redundant] It is therefore unnecessary to specify $G$ on $M$.

**unnoticed** The following result seems to have been unnoticed so far.

**unravel** Unravelling the above definitions, we obtain the following, more explicit description of $H(X)$.

**unrelated** These two approaches seem completely unrelated to ours.

**unresolved** [*see also*: open, unanswered, unsolved] The question whether $A$ belongs to $W$ was left unresolved there.

**unsatisfying** This proof is unsatisfying in that one needs to know the formula for $f$ in advance.

**unsolved** [*see also*: open, unanswered, unresolved] Some interesting cases remain unsolved.

**until** The algorithm compares $x$ to each entry in turn until a match is found or the list is exhausted. • This process can be repeated until we obtain the promised triangulation. • We continue doing so until we get out of $S$. • We walk from $X$ to $Y$ until reaching the first place where $G$ changes. • We defer the proof of the 'moreover' statement in Theorem 5 until after the proof of the lemma. • There are, however, a few important papers of which we were unaware until fairly recently. • [Use *until* only when talking about time.]

**unusual** [*see also*: remarkable, rare, strange] One unusual feature of the solution should be pointed out.

**up** The saddle-point conditions are satisfied up to an error $o(n)$. • Here $F$ is only defined up to an additive constant. • Therefore, $G$ is uniquely determined up to unitary equivalence. • If we know a covering space $E$ of $X$ then not only do we know that....., but we can also recover $X$ (up to homeomorphism) as $E/G$. • from stage $A$ up to, but not including, stage $B$ • He used a new version of an algorithm for finding all normal subgroups of up to a given index in a finitely presented group. • The arguments from this point up to Theorem 2 do not depend on..... • Up to now, we have assumed that..... • The coefficients of $A$ add up to unity. • Other situations in dynamics where the $p$-adic numbers come up are surveyed in [W]. • Arguing as before, we shall end up with a simple tree all of whose facets contain $V$. • Neighbourhoods of points in these spaces appear at first glance to have a nice regular structure, but upon closer scrutiny, one sees that many neighbourhoods contain collections of arcs hopelessly folded up. • These subsets join up to form a simple closed curve passing through $A$ and $B$. • The set $WF(u)$ is made up of bicharacteristic strips. • Each of the terms that make up $G(t)$ is well defined. • Now $F$ is defined to make $G$ and $H$ match up at the left end of $I$. • Write out the integers from 1 to $n$. Pair up the first and the last, the second and next to last, etc. • Values computed for the right side of (2) were rounded up in the fourth decimal place. • In Section 2 we set up notation and terminology. [= prepare] • On $TK$ we set up the symplectic structure induced by the metric. [= introduce] • This space of curves also shows up in the theorem of Meyer on..... • We shall split up $K$ as follows. • First we take up the trivial case $h = 0$. • In closing this section we take up a result which will play a pivotal role in the characterization of..... • It should be no surprise that a condition like $a_i \neq b_i$ turns up in this theorem. • The lectures were written up by M. Stong.

**update** The present article is an updated version of our work [D], the main body of which was first posted to the arXiv in 2013.

**upon** The second inequality follows upon considering $R_i$ for $i > 0$. • We may assume, upon replacing $F$ by $F_1$, that..... • Upon combining the estimate for $B$ with (5), we have now established the first conclusion of Theorem 8. • Adding $E$ to both sides of (1), we can call upon (2) to obtain (3).

**upper** Kim announces that (by a tedious proof) the upper bound can be reduced to 10. • We use upper case letters to represent inverses of generators. [= capital letters] • an upper semicontinuous function

**usage** The contemporary usage avoids passing to a Lévy collapse extension at the expense of stronger large cardinal hypotheses.

**use** **1** [*see also*: application, means, via, utility] Apart from these two chapters, we make no use of the results of [4]. • The proof makes essential use of the Sobolev inequalities. • This section makes heavy use of a theorem of Alsen and related results. • We shall make much use of the following result of Nickel. • Our proofs make substantial use of classical topology of the plane. • This bound, due to Dudley [D85], long predates Theorem 7 and has found widespread use. • That is—apart from the use of relaxed controls—precisely the stochastic Bellman equation. • In the following applications, use will be made of..... • The idea behind our use of the $\sigma$'s is that..... • We depart from these previous works in our use of the non-ergodic versions of the basic machinery. • We now state a result that will be of use later. • This may be of use to those interested in quantitative bounds. • For later use in conjunction with the weighted averages occurring in (2), we next consider..... [Note the double $r$ in *occurring.*] • For future use, choose any monotone $h(m)$ tending to infinity such that..... • The main new feature is the use of the face ring to produce lower bounds for the number of vertices. • The second way of constructing $K(F)$ is through the use of..... • Some proofs may be simplified by the use ⟨by use⟩ of.....
**2** [*see also*: apply, employ, exploit] We shall not use this fact in any essential way. • We obtain (using the fact that $Q$ is a probability measure) $Q(A) =$..... • The advantage of using..... lies in the fact that..... • This can be proved by using a random projection method suggested to us by John Brown. • However, in the most general form, this description is not easy to use for determining when the right hand side of the equation is a division ring. • Quite a few of them are now widely used. • We conclude with two simple lemmas to be used mainly in the proof of..... • In [1] the methods used are those of differential topology.

**useful** [*see also*: helpful, advantageous, valuable, convenient] A concept which has proved useful in the study of measures is tameness. • These results show that an analysis purely at the level of functions cannot be useful for describing..... • This assumption is useful for simplifying proofs. • The following variant of Theorem 2 is occasionally useful. • This is the least useful of the four theorems. • At times [= Occasionally] it will be useful to consider..... • It is useful to consider some rather simple examples to gain some intuition. • These idempotents provide a useful tool for analysing the structure of $G$.

**usefulness** [*see also*: utility] The usefulness and interest of this correspondence will of course be enhanced if there is a way of returning from the transforms to the functions, that is to say, if there is an inversion formula.

**usual** [*see also*: common, customary, familiar, standard] This metric produces the usual topology of $X$. • A different notation is used because the usual tensor product symbol is reserved for the tensor product of $A$-bimodules. • The usual definition is more restrictive in that it requires that $a \in A$. • As usual, we can rephrase the above result as a uniqueness theorem. [NOT "As usually"] • (with the usual modification for $p = \infty$) • One unusual feature of the solution should be pointed out.

**usually** [*see also*: normally] It will usually be assumed that..... • The calculation of $M(f)$ is usually no harder than the calculation of $N(f)$. • In practice, $D$ is usually too large a set to work with. • This topology is compact, but not usually Hausdorff, nor even $T_1$. • In applications of Theorem 1, we are usually seeking a lower bound for $f(E)$.

**utility** [*see also*: usefulness] The following result illustrates the utility of (3). • These functions are sometimes called elementary factors. Their utility depends on the fact that..... • Its utility stems from the fact that controlling entropy numbers only requires us to approximate the set $T$ at a single scale, for which numerous methods are available.

**utilize** [*see also*: use, employ, apply] The middle part of Table 2 compares the classification according to max $a_i$, where only the longitudinal information is utilized, with those according to max $b_{ik}$, where both longitudinal and survival information are used.

## V

**vacuous** In the case $k = 0$ condition (A) becomes vacuous.

**vacuously** If $K$ is empty, part of the hypothesis is vacuously satisfied.

**valid** [*see also*: correct, true, hold] Theorems 3 and 6 of [2], with the appropriate changes, are also valid. • The statement of Theorem 5 remains valid if we replace '$f$ is compact' by 'the norm of $f$ is bounded'. • However, as observed in [5], the proof given in [7] is equally valid for regular sets. • The goal of the present paper is to give a description of this kernel $T(G, H)$, valid for *all* $G$ and $H$, *in purely elementary terms*, notably not using stable categories, nor representations, but essentially only the action of $G$ by conjugation on the lattice of its $p$-subgroups. • One can check using linear algebraic manipulations that $f$ and $g$ are valid morphisms of $DA$ bimodules. • This argument is invalid for several reasons.

**validate** [*see also*: prove] Their remarkable achievement seemed to validate John's claim. However, it turned out that.....

**validity** Altering finitely many terms of the sequence $u_n$ does not affect the validity of (9). • All the evidence points to the validity of the conjecture.

**valuable** [*see also*: useful, helpful, worth] Our study grew out of some valuable conversations with Kirk Douglas.

**value** The iterates eventually reach the value 1. • The map $U(t)$ takes values in some compact space $G$. • Each factor in (4) has absolute value 1 on $T$. • Let $n_k$ be the first location to the right of the $k$th decimal place of $W$ that has a value less than $b$. • Every element of $A$ has $f$-value 2. [= the value of $f$ at this element is 2] • Then $F$ is less than 1 in absolute value. • The terms of the series (1) decrease in absolute value and their signs alternate. • We claim that, by setting $w$ to zero on this interval, the value of $F(w)$ is reduced. • the largest $k$ value • a real-valued function

**vanish** [*see also*: disappear, zero] Hence $F$ vanishes to order 3 ⟨to infinite order⟩ at $x$. • Unfortunately, the details of the calculations were omitted, and there is some doubt on whether the result is correct since our analysis suggests that $P_2$ must vanish to third order; the presence of $L^{-2}$ is also suspect. • a nowhere vanishing vector field

**variable** Thus $X$ can be taken as coordinate variable on $M$. • If one thinks of $x, y$ as space variables and of $z$ as time, then..... • a function of several variables [NOT "of many variables"] • Thorin discovered the complex-variable proof of Riesz's theorem. • A homogeneous two-variable function $f$ can be reduced to a one-variable function $F(x) = f(1, x)$.

**variant** [*see also*: adaptation, adjustment, modification, variation, version] The following variant of Theorem 2 is occasionally useful. • The argument is a variant of one in [5] and has been used several times since.

**variation** [*see also*: adaptation, adjustment, modification, variant, version] The example is a variation on the space known as the 'Warsaw circle'. • This is essentially a variation on the prime number theorem. • Let us sketch the proof of the first estimate, which is a variation of standard arguments. • As noted in the introduction, this is basically combining Sawyer's result with a variation of the arguments of Hunt.

**variety** [*see also*: number, many, plentiful, several] Actual construction of..... may be accomplished in a variety of ways. • The question of..... has been explored under a variety of conditions on $A$. • The approach in [GT] provides a unified way of treating a wide variety of seemingly disparate examples.

**various** [*see also*: different, several] We shall be considering $L$ on various function spaces. • We do not know how $V$ depends on the various choices made. • Few of various existing proofs are constructive. • The author thanks the referee for recommending various improvements in exposition. • Such an expression is provided by the following result of Gess [5], later proved in other ways by various persons.

**variously** These spaces are defined and variously characterized in [1]. • We should stress that this is only one of several versions of the 'measurable selector theorem', due variously to von Neumann, Jankow, Luzin and others. • It is one of a new class of algorithms, variously called 'PB-algorithms' or 'premodular algorithms'.

**vary** [*see also*: alter, change, range, differ, different] Here $c$ denotes a constant which can vary from line to line. • Fix $n$ and let $c$ vary. • A natural question to ask is how the quantities $A(S,T)$ and $B(S,T)$ vary as $S$ and $T$ change. • As we let $t$ vary, $f(t)$ describes a curve in $M$. • Within $I$, the function $f$ varies ⟨oscillates⟩ by less than 1. • The idea is that $C$ is fixed, but $X$ and $Y$ vary according to circumstances. • Then $F$ varies smoothly in $t$. • The samples vary in length. • Note that $m$ is permitted to vary with the number of inputs. • A number of authors have considered, in varying degrees of generality, the problem of determining..... • a slowly varying function • Computer evidence suggests the dynamics of these maps is rich and varied.

**verbatim** [= in exactly the same words; *see also*: word] As another illustration of this phenomenon, we will show that Talagrand's bound for $q$-convex bodies holds verbatim for $\ell_q$-balls in Banach spaces with an unconditional basis.

**verification** [*see also*: check, examination, inspection, proof, scrutiny] The only point that requires care is the verification of..... • A standard verification shows that..... • This concludes the verification of Claim 2. • The only thing to check is that maps compose correctly; but this is an easy, if tedious, verification.

**verify** [$\neq$ satisfy; *see also*: check, examine] We are seeking to verify the conjecture that every Banach sequence algebra $A$ that is a Ditkin algebra is PAA. • To prove (8), it only remains to verify that..... • Indeed, it is routine to verify that the index so constructed is independent of the choices made. • We leave it to the reader to verify that..... • ....., as is easily verified. • The significance of the function $f_n$ lies in the easily verified relation..... • Now the reader will have no trouble verifying that..... • [Do not write "The function $F$ verifies condition (2)" if you mean *The function $f$ satisfies condition (2).*]

**version** [*see also*: variant, variation] We should stress that this is only one of several versions of the 'measurable selector theorem', due variously to von Neumann, Jankow, Luzin and others. • We will call on this version of the inverse theorem when we come to our applications in Section 2. • We write $\beta = .....$, which is a slight modification to the previous version of $\beta$. • The present article is an updated version of our work [D], the main body of which was first posted to the arXiv in 2013. • a current ⟨up-to-date/preliminary/definitive/final/amended/enhanced/plausible/refined/sophisticated/elaborate/simplified/weakened/explicit/quantitative⟩ version

**very** [*see also*: precise] These results therefore describe the very close connection between the method of encoding and the structures we are aiming to classify. • By its very definition, $f$ is continuous. • Finally, (d) is clear from the very last statement of Theorem 4. • A cycle may very well be represented as a sum of paths that are not closed.

**via** [*see also*: means] The tangent space to $N$ at $x$ is identified with $M$ via left translation. • Then $F$ and $G$ are homotopic via a homotopy $H$ such that..... • It is clear that $A$ is related to $B$ via (3.4). • The standard proofs proceed via the Cauchy formula. • ....., from which it is an easy step, via Lemma 1, to the conclusion that..... • The set $B$, together with the finite-codimensional subspaces of $E$, generates (via finite intersections and supersets) a subspace maximal filter on $E$.

**view** **1** [*see also*: viewpoint, idea, perspective] The preceding observation, when looked at from a more general point of view, leads to..... • It is this point of view which is close to that used in $C^*$-algebras. • Both of these conditions are satisfied if $f$ is bounded (the second in view of Assumption 3). • With a view to bounding $I$ in (8) by the right side of (6), we first..... [= Intending to bound]

**2** [*see also*: consider, regard, see, think] It is convenient to view $G$ as a nilpotent group. • The theory of correspondences may be viewed as bridging the gap between..... • Here we are viewing the coefficients as reduced fractions.

**viewpoint** [*see also*: standpoint, view, perspective] From the viewpoint of the Fox theorem, there is not an exact parallel between the odds and the evens.

**violate** [*see also*: fail] We note that $H$ is in fact not Lipschitz continuous if this condition is violated. • This violates the maximum principle.

**visit** **1** This work was conducted during a visit of the author to Dartmouth College.

**2** This research was initiated when the first author was visiting the University of Alberta in the summer of 2008; the financial support and kind hospitality are gratefully acknowledged.

**visualize** To calculate (2), it helps to visualize the $S_n$ as the successive positions in a random walk. • The knowledge of the invariant subspaces of an operator helps us to visualize its action.

## W

**want** [*see also*: wish, desire, require] The reader might want to compare this remark with [2, Cor. 3]. • This module is denoted by $H(X)$, or $H(X, R)$ if we want to make explicit the coefficient ring. • This $t$ has the feature we want. • We will want to prove that..... To do so, we will need to define.....

**warrant** [*see also*: merit, worth] A complete explication of the Fox spaces is warranted, as it will likely reveal further clues to the differences between the parabolic and hyperbolic theories. • This process is apparently novel and seems natural enough to warrant study.

**watch** [*see also*: beware, caution] (Watch the order of the $g_i$!)

**way** [*see also*: approach, method, procedure, technique, aside] Now $G$ can be handled in much the same way. • Actual construction of..... may be accomplished in a variety of ways. • Thus modules over categories are in many ways like ordinary modules. • We shall not use this fact in any essential way. • This abstract theory is not in any way more difficult than the special case of the real line. • An alternative way to analyze $S$ is to note that..... • The reason for our attention to these questions, beyond their intrinsic interest, is that, in certain circumstances, they provide a way to prove unique ergodicity results for groups. • Here is another way of stating (c). • However, we know of no way of deriving one theory directly from the other. • The approach in [GT] provides a unified way of treating a wide variety of seemingly disparate examples. • This is the way Theorem 3 was proved. • This follows from Lemma 2 just the way (a) follows from (b). • The way we prove Theorem 1 is via the following general principle. • It follows from the way $f$ was defined that..... • Any congruence arises this way. • Theorem 2 can be proved a number of different ways. • Put this way, the question is not precise enough. • By way of illustration, here is an example of..... • The implication one way follows from Theorem 2. • On the way we analyze the relationship between..... • Along the way, we come across some perhaps unexpected rigidity properties of familiar spaces. • For nonarchimedean $v$ there has been significant progress, but a proof of the general local correspondence still seems a long way off.

**weak** The convergence of the sum on the left is of course a weaker statement than the convergence of (2). • In fact, we shall prove our result under the weaker hypothesis that $W$ is weakly bounded, rather than just bounded, on an infinite subset of $G$. • The weight satisfies a weak type $(1, 1)$ estimate. • Then $x_n$ converges weak* to $x$. [OR weakly*]

**weaken** [*see also*: relax] The primary advance is to weaken the assumption that $H$ is $C^2$, used by previous authors, to the natural condition that $H$ is $C^1$. • We can make $g$ Lipschitz at the price of weakening condition (i). • Note that (2) is a slightly weakened version of the Pólya inequality.

**weakness** [*see also*: disadvantage, shortcoming, fail] It is important to notice some of the weaknesses inherent in the above approach.

**wealth** [*see also*: abundance, much] The survey article [5] by Diestel contains a wealth of information about the Dunford-Pettis property.

**well** [*see also*: also, too] For binary strings, the algorithm does not do quite as well. • But $H$ itself can equally well be a member of $S$. • Our asymptotic results compare reasonably well with the numerical results reported in [8]. • Since the integrands vanish at 0, we may as well assume that..... • Other types fit into this pattern as well. • Note that both sides of the inequality may well be infinite. • A cycle may very well be represented as a sum of paths that are not closed. • It may well be that no optimal time exists, as the following example shows. • Although standard, the notion of a virtual vector bundle is not particularly well known.

**were** Suppose the lemma were false. Then we could find..... • Suppose $x$ were not in $B$. Then there would be..... • If it were true that....., the same argument would apply to $f$. • However, if $B$ were omitted in (1), the case $n = 0$ would imply $Nf = 1$, an undesirable restriction.

**what** Under those conditions, what does the sum on the left hand side of (8) signify? • Does the limit of $f(z)$ exist as $z$ goes to zero? If so, what is it? • What is $F(c)$ if $c$ is a positively oriented circle? • What relation exists between $f$ and $g$? • What about the case where $q > 2$? • What is left is to show that..... • What is still lacking is an explicit description of $\ker C$. • The sequence $a_n$ is what is sometimes called a recovery sequence for $v$. • By what has been proved, there exists $n$ such that..... • Here is a more explicit statement of what the theorem asserts. • The sum of the depths is at most two-thirds of what it was before. • Throughout what follows, we shall freely use without explicit mention the elementary fact that..... • It is not immediately obvious what this generalization has to be. • We conclude that, no matter what the class of $b$ is, we have an upper bound on $M$. • But if $E$ is not reflexive or—what is the same—$w$ is weak, then..... • Here $G$ is discontinuous and, what is more, it does not belong to $V$. • [Note the difference between *what* and *which* in sentences similar to the last two examples: *what* refers to what follows it, while *which* refers to what precedes it.]

**whatever** We shall, by convenient abuse of notation, generally denote it by $x_t$ whatever probability space it is defined on. • The problem is that, whatever the choice of $F$, there is always another function $f$ such that.....

**whatsoever** The preceding definitions can of course equally well be made with any field whatsoever in place of the complex field. • By contrast, the group $D(M)$ admits no Polish group topology whatsoever.

**when** [*see also*: if, whenever] Then $F$ becomes inner when extended to $B$. • It is important to pay attention to the ranges of the mappings involved when trying to define..... • When reading the proof of Lemma 2, it is helpful to keep in mind that..... • When is it the case that.....? • We have $d(f, g) = 0$ precisely when $f = g$ a.e.

**whence** [= as a consequence of which] We have shown that....., whence it is readily inferred that.....

**whenever** [*see also*: if, when] Whenever the dimension drops by 1, the rank drops by at most $Z$. • We denote the complement of $A$ by $A^c$ whenever it is clear from the context with respect to which larger set the complement is taken. • Next, (1) shows that (2) holds whenever $g = f(n)$ for some $n$. • Suppose that $T^*$ is continuous whenever $T$ is. • A semilattice $A$ has breadth $n$ if whenever $E < A$ and $|E| > n$, there is an $x$ such that.....

**where** Where there is a choice of several acceptable forms, that form is selected which..... • Where it is important to distinguish different norms on $E$, we shall use the notation..... • Where it is possible, we outline the proofs so that the reader will not have to hunt for obscure references. • Where we could, we have chosen these examples from naturally occurring mathematical structures. [Note the double *r* in *occurring*.] • There are many situations where this occurs naturally. • This is where the notion of an upper gradient comes in. • Important cases are where $S =$..... • [Note that *where* can sometimes be ambiguous: "where $i \in I$" after a formula can mean either *for all* $i \in I$ or *for some* $i \in I$.]

**whereas** [*see also*: while] Their result gives no information when $k$ is large, whereas (5) is significant regardless of the size of $k$. • Further, the argument here is in terms of $A$, whereas that of Theorem 5 is in terms of the algebra $B$ of Gelfand transforms.

**wherever** Also, wherever possible, we work with integer coefficients, enabling us to obtain information about torsion.

**whether** [*see also*: if] The question of whether $B$ is ever strictly larger than $A$ remains open. [OR The question whether] • Perhaps the most important problem involving $f$-vectors is whether or not John's conditions extend to spheres. • We shall be interested in seeing whether..... • Note that this lemma does not give a simple criterion for deciding whether a given topology is indeed of the form $T_f$. • So far it seems not to be known whether the geometric condition on $X$ can be omitted. • We do not know whether or not $Q(R) = R$ in this situation. • To tell whether a labelled partial order is a skeleton, it suffices to look at its substructures of size at most three. • We conclude that whether a space $X$ is an RG-space is not determined by the ring structure of $C(X)$. • The method works irrespective of whether $A$ or $B$ is used. • Unfortunately, the details of the calculations were omitted, and there is some doubt on whether the result is correct since our analysis suggests that $P_2$ must vanish to third order; the presence of $L^{-2}$ is also suspect. • Thus, whether or not $x$ is in the list, one comparison is done. • The derivation $D$ is the same whether we regard $E$ as a derivation on $X$ or on $Y$. • We consider every subset of $N$, whether finite or infinite, to be an increasing sequence.

**which** [*see also*: that] For which $f$ does equality hold in this inequality? • There has since been a series of improvements, of which we briefly mention the work of Levinson. • Where there is a choice of several acceptable forms, that form is selected which..... • Let $I$ be the family of all subalgebras which contain $F$. [OR that contain $F$; you can use either *that* or *which* in defining clauses.] • We denote the complement of $A$ by $A^c$ whenever it is clear from the context with respect to which larger set the complement is taken. • The map $f$, which we know to be bounded, is also right-continuous. [NOT "that we know"; do not use *that* in non-defining clauses.] • Hence $F$ is compact, which yields $M = N$. [NOT "what yields"] • ....., which completes the proof. • [Note the difference between *what* and *which* in sentences similar to the last two examples: *what* refers to what follows it, while *which* refers to what precedes it.]

**whichever** It produces the same outcome whichever path is taken. [= no matter which] • Whichever option we choose, there will be disadvantages:.....

**while** [*see also*: whereas] In 1988, while attempting to generalize this result, the second author noticed that..... • While topological measures resemble Borel measures, they in general need not be subadditive.

**whole** [*see also*: all, complete, entire, full, total] We can extend $f$ by zero to the whole $\Omega$. [OR the whole of $\Omega$] • Those more than half a square count as whole ones. • On the whole, the solution can hardly be considered satisfactory. • a fragment of a greater whole

**wholly** [*see also*: completely, entirely, fully] This book is wholly concerned with.....

**whose** Thus $C$ lies on no segment both of whose endpoints lie in $K$. • a manifold all of whose geodesics are closed [= a manifold whose geodesics are all closed] • a progression each of whose terms can be written as..... • Let $M$ be the manifold to whose boundary $f$ maps $K$. • There are $n$ continua in $X$ the union of whose images under $f$ is $K$. • Here $\{x\}$ is the set whose only member is $x$. • Let $A_i$ be disjoint members of $M$ whose union is $E$.

**why** To understand why, let us remember that..... • This is why no truncation is required here. • Now why can such objects be found?

**wide** [*see also*: large, broad, extensive, substantial] We give a fairly simple description of a wide class of averaging operators for which this rate of growth can be seen to be necessary. • The approach in [GT] provides a unified way of treating a wide variety of seemingly disparate examples. • The abstract theory gives us a tool of much wider applicability. • This class is wide enough to include a number of examples of interest.

**widely** Quite a few of them are now widely used.

**will** It is hoped that a deeper understanding of these residues will help establish new results about the distribution of modular symbols. • It will eventually appear that the results are much more satisfactory than one might expect. • Whichever option we choose, there will be disadvantages:..... • Some of the isomorphism classes above will have a rank of 2. • The proof of (8) will be given after we have proved that..... • As remarked after Definition 1, we will have proved the lemma if we show that.....

**-wise** Let $A$ denote the rectangle $B$ rotated through $\pi/6$ in a clockwise direction about the vertex $(0, 1)$. • The set $S$ is a semigroup with respect to coordinatewise addition. • Pointwise convergence presents a more delicate problem. • The sequence $f_n$ converges to $f$ pointwise. [NOT "pointwisely"] • The assumption of minimality is clearly necessary, as a given $G$-flow may have in general many minimal subflows that are pairwise disjoint. • ....., where $\text{sign}(z)$ operates entrywise on a vector $z$.

**wish** [*see also*: want, desire] We wish to arrange that $f$ be as smooth as possible. • In this paper we wish to renew an interest in the systematic study of the relationships between cardinal invariants with respect to Borel morphisms. • We now wish to discuss in some depth the problem of..... • If one wishes, one can define the random ordering on finite subsets of Euclidean spaces in all dimensions at once by considering.....

**with** The terms with $n > N$ add up to less than 2. • an algebra with unit • a function with compact support • Then $F$ is Poisson distributed with mean $m$. • Let $A : X \to Y$ be bounded with norm $M$. • With this definition, the set of equivalence classes is a metric space. • With this observation it is easy to prove the following result. • With Lemma 4 at our disposal, we can find..... • With the customary abuse of notation, the same symbol is used for..... • It is proved in [1] (albeit with a slightly different formulation) that..... • With more work, one could show that..... • .....with $e_0$ denoting multiplication by $f$. • As with the digit sums, we can use alternating digit sums to prove..... [= Just as in the case of digit sums] • Choose $\delta$ in accordance with Section 8. • In analogy with (1) we have..... • With each $D$ there is associated a region $V_D$. • We show that $A$ is negligible compared with $B$. • This notion is closely connected with that of packing dimension. • Let us continue with the proof of Theorem 2. • It is worth making a link with Theorem 1. • The exact sequence ends on the right with $H(X)$. • a word starting with $a$ and ending with $b$ • We can make this clear with the following example. • Note that $m$ is permitted to vary with the number of inputs.

**within** [*see also*: inside, up to] The point $p$ is within distance $d$ $\langle$within a distance $d\rangle$ of $X$. • Then $F$ is within $d$ of the integers. • The proportion of automorphisms $\pi$ of $B$ such that $\pi_*(f) \subset C$ is equal to $\rho(A)$, within $\epsilon$. • Note that $f$ is determined only to within a set of measure zero. • The zeros of $L$-functions are all accurate to within $10^{-5}$. • Each component that meets $X$ lies entirely within $X$. • Since $H \in F$, it follows that $K$ is not contained entirely within any $H_i$. • Within $I$, the function $f$ varies by less than 1. • This example falls within the scope of Cox's theorem. • a sequence of smooth domains that approximates $D$ from within

**without** This shows that $f$ could not have $n$ zeros without being identically zero. • Hence $Z$ enters $D$ without meeting $x = 0$. • Thus $C$ can be removed without changing the union. • This allows proving the representation formula without having to integrate over $X$. • Take $g_1, ..., g_n$ without common zero. • However, it is unclear how to prove Corollary 3 without the rank theorem. • Throughout what follows, we shall freely use without explicit mention the elementary fact that.....

**witness** **1** Take for $T$ any witness to $X$ having property P.
**2** [*see also*: exemplify] Now $T$ witnesses property P. • Note that $R_2$ witnesses that $A$ is compact.

**wonder** The reader may wonder why we have apparently ignored the possibility of obtaining a better lower bound by considering..... • It is natural to wonder whether the inequality remains true for the more general situation in Theorem A...... • One might wonder how large this finite set is.

**word** [*see also*: name, term] We add the word 'positive' for emphasis. • The words *collection, family* and *class* will be used synonymously with *set.* • Let us state once more, in different words, what the preceding result says if $p = 1$. • Finally, a few words about the value of $\tau$. • Finally, a word of caution.

**work** **1** The present paper owes a great debt to Strang's work. • Recent work of Kirby shows that..... • This work was conducted during a visit of the author to Dartmouth College. • Kirk, building on work of Penot, developed a more abstract version of..... • The name of Harald Bohr is attached to $bG$ in recognition of his work on almost periodic functions. • With a little more work we can prove..... • For general $\mu$, we need to do some extra work. • Now we put our probabilistic estimates to work.
**2** [*see also*: succeed] In addition to illustrating how our formulas work in practice, it provides a counterexample to Brown's conjecture. • The method works regardless of whether $A$ or $B$ is used. • We conjecture that in the general case refinements of the above ideas will essentially still work to give similar results. • The argument works equally well for $R$ being a general ring with unity. • A further complication arises from 'BP', which works rather differently from the other labels. • We can assume that $p$ is as close to $q$ as is necessary for the following proof to work. • Essentially, the conditions placed on $A$ serve to ensure that $B$ is 'free enough' for the definition of $G$ to work. • The definition of generator is designed to make the proof above work for $M = Z$. • Also, wherever possible, we work with integer coefficients, enabling us to obtain information about torsion. • Rather than working directly with $V(s)$, we shall instead consider the following two general integrals:..... [OR Rather than work] • In practice, $D$ is usually too large a set to work with. • We now work toward the establishment of properties (A) to (D). • In Section 4 we worked out a fairly detailed picture of linear $H$-systems.

**worry** Here the functional-analytic tools required are simpler, but this easier setting allows us to develop some methods without undue worry about technicalities.

**worsen** [*see also*: deteriorate] The first estimate worsens as $n$ increases, whereas the second estimate improves.

**worth** [*see also*: merit, warrant, worthy, worthwhile] It is an idea worth carrying out. [NOT "worth while carrying out"] • It is also clear that there are extensions to the case of....., but they do not seem to be worth the effort of formulating them separately. • Before going to the proof, it is worth noting that..... • It is worth making a link with Theorem 1. • It may be worth reminding the reader that.....

**worthwhile** It is worthwile to ask if the difference must always exist.

**worthy** [*see also*: merit, worth, warrant] The method sketched in Section 3 of [Con] carries through with our choice of $\psi = \psi_1 + \psi_2$, but there is one extra ingredient worthy of mention.

**would** Hence we would expect the functions $f_j$ to behave similarly. • Compact multipliers, as one would expect, are those elements of $A$ which..... • One might hope that this method would work at least for sufficiently regular maps; however,..... • It would clearly have been sufficient to assume..... • If it were true that....., the same argument would apply to $f$ and would show..... • However, if $B$ were omitted in (1), the case $n = 0$ would imply $Nf = 1$, an undesirable restriction.

**write** [*see also*: denote, symbol] We write $H$ for the value of $G$ at zero. • We shall frequently write w.w. for 'weakly wandering'. • ....., which we can write as $Df =$..... • Such cycles are said to be homologous (written $c \sim c'$). • At the time of writing [5], I was not aware of this reference. • In the course of writing this paper we learned that P. Fox has simultaneously obtained results similar to ours in certain respects. • Important analytic differences appear when one writes down precisely what is meant by..... • It may be difficult to write down an explicit domain of $F$. • Note that (2) is simply (1) written out in detail. • By writing out the appropriate equations, we see that this is equivalent to..... • The lectures were written up by M. Stong.

**writing** As of this writing, the authors have no example of a monotone self-map of the Pontryagin surface with absolute degree greater than one. • To simplify the writing, we take $a = 0$ and omit the subscripts $a$. •

## Y

**year** [*see also*: date] The same year, Maurer showed that..... • Maurer, in the same year, showed that..... • In the year 2000 ⟨In 2000⟩, two important number theory conferences were held at Princeton University. • However, the connection with Gromov's work has been obscured in recent years by an emphasis (in the algebraic topology literature) on configuration spaces. • However, over the last fifteen years or so, there have been many examples of explicit descriptions of non-trivial metrizable universal minimal flows: see [Pe], [GW] and [K].

**yet** [*see also*: but, still, nevertheless] For $j = 1$ the operator is bounded, yet [= but] the integral (8) fails to be finite. • Then $F$ is strictly increasing and yet has zero derivative on a dense set. • In the next section we introduce yet another formulation of the problem. • The as yet unproved conjecture of Newman is that..... • On the other hand, as yet, we have not taken advantage of the basic property enjoyed by $S$: it is a simplex. • We expect that this is likely to hold for all outers, but cannot prove this as yet. • The conjecture has not been proved yet. • In the remainder of this section, we study some properties of $K$, with the eventual aim (not realized yet) of describing $K$ directly using $G$. • Further research may yet explain the enigma. • Some, but not yet all, of these 22 forms have since been shown to be regular.

**yield** [*see also*: produce, provide] The argument can easily be modified to yield a proof for the case of $k$ positive. • At first glance Lemma 2 seems to yield four possible outcomes. • Another proof (yielding more information) can be found in [GH]. • Specifically, one might hope that a clever application of something like Choquet's theorem would yield the desired conclusion. • The idea of the following proof, which yields both (a) and (b) at one stroke, is due to von Neumann. • This finally yields $f = g$. [NOT "yields that $f = g$"] • The case where $i$ is odd yields to a similar argument.

## Z

**zero** [*pl.* zeros or zeroes; *see also*: vanish] Equating the coefficient of $x^2$ in $V$ to zero, we get..... • Then $F$ has simple zeros with residue 1 at the integers. • The integrand is zero outside $D$. • the multi-index with all entries zero except the $k$th which is one • the zero solution • the all-zero vector