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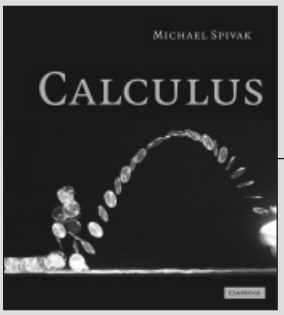

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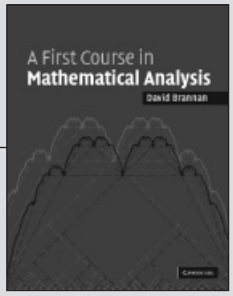
Highlights



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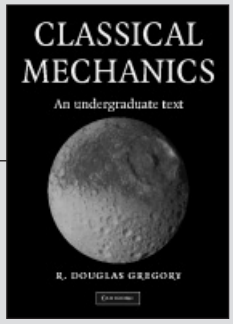

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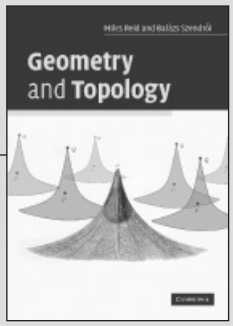

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A message from the Cambridge Mathematics editors

Welcome to the 2006 Mathematics catalogue from Cambridge University Press, featuring the latest and the best in mathematics publishing.

This catalogue features information on our many new titles as well as a selection of classic Cambridge texts, and is not intended to be a comprehensive listing of all our publishing. However, every single one of our books can be found on our website at: **www.cambridge.org/mathematics** where you can buy, request inspection copies of textbooks, or simply find out more about any of our titles.

With the International Congress of Mathematicians in Madrid this summer, 2006 is set to be an important year, and Cambridge is delighted to be attending the meeting where we will have the full range of our latest titles along with much of our prestigious backlist.

Of course, all of our relevant new titles are always on display at the conferences we attend (assuming we haven't sold out!) so if you see our stand at a meeting, we'd be delighted for you to come and browse the books and ask us any questions you might have about our publishing programme.

Hope to see you in Madrid!

David Tranah, (dtranah@cambridge.org)
Roger Astley, (rastley@cambridge.org)
Diana Gillooly, (dgillooly@cambridge.org)
Peter Thompson, (pthompson@cambridge.org)
Lauren Cowles, (lcowles@cambridge.org)

CAMBRIDGE
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Useful contacts

Book proposals: David Tranah (dtranah@cambridge.org)

For further information about mathematics titles: Graham Robertson (grobertson@cambridge.org)

All other enquiries, phone +44 (0) 1223 312393 or email Information@cambridge.org

Prices and Payment

Prices and publication dates are correct at the time of going to press but are subject to alteration without notice.

www.cambridge.org/mathematics

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Many of our journal titles are now available online. Each journal entry in this catalogue indicates where the price includes, or will include, access to the electronic version of the journal during 2005. Full text is available FREE to all individuals within the registered domain address of full rate subscribers. In addition, the service provides all users with FREE access to tables of contents and abstracts, and a FREE email alerting service.

Analysis and Probability

▼ FEATURE TITLE

TEXTBOOK

A First Course in Mathematical Analysis

David Brannan
The Open University, Milton Keynes

Mathematical Analysis (often called Advanced Calculus) is generally found by students to be one of their hardest courses in Mathematics. This text uses the so-called sequential approach to continuity, differentiability and integration to make it easier to understand the subject.

The text has a large number of diagrams and helpful margin notes; and uses many graded examples and exercises, often with complete solutions, to guide students through the tricky points. It is suitable for self-study or use in parallel with a standard University course on the subject.

- A sequential approach to continuity, differentiability and integration to make it easier to understand the subject
- Many graded examples and exercises, with large numbers of complete solutions, to guide students through the tricky points
- Suitable for self-study or use in parallel with a standard University course; unlike other textbooks in the subject, should be intelligible to students on their own, offering considerable study help

Contents: Preface; 0. Introduction: Calculus and Analysis; 1. Numbers; 2. Sequences; 3. Series; 4. Continuity; 5. Limits and continuity; 6. Differentiation; 7. Integration; 8. Power series; Appendix 1. Sets, functions and proofs; Appendix 2. Standard derivatives and primitives; Appendix 3. The first 1,000 decimal places of the square root of 2, e and π; Appendix 4. Solutions to the problems; Index.

– 2006 246 x 189 mm c. 368pp
211 line diagrams 1 table 207 exercises
– 978 0 521 86439 8 (0 521 86439 9)
Hardback c. £50.00
– 978 0 521 68424 8 (0 521 68424 2)
Paperback c. £24.99
– **Publication August 2006**

▼ FEATURE TITLE

CLASSIC TEXTBOOK

AVAILABLE FROM CAMBRIDGE

Calculus

Third edition

Michael Spivak
Publish or Perish Inc, Houston, Texas

Spivak's aim is to present calculus, i.e. analysis, as the first real encounter with mathematics: how it is a rigorous theory rather than just tools and techniques learned by rote. Since students traditionally find the subject hard to grasp, Spivak provides leisurely explanations, a profusion of examples, a wide range of exercises and plenty of illustrations in an easy-going approach that enlightens difficult concepts and rewards effort.

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– 2006 252 x 225 mm c. 670pp
700 line diagrams
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Hardback c. £27.99
– **Publication April 2006**

TEXTBOOK

Measures, Integrals and Martingales

René L. Schilling
Philipps-Universität Marburg, Germany

This is a concise and elementary introduction to measure and integration theory as it is currently needed in many parts of analysis and probability theory. The basic theory – measures, integrals, convergence theorems, L^p-spaces and multiple integrals – is explored in the first part of the book. The second part then uses the notion of martingales to develop the theory further, covering topics such as Jacobi's generalized transformation Theorem, the Radon-Nikodym theorem, differentiation of measures, Hardy-Littlewood maximal functions or general Fourier series. Undergraduate calculus and an introductory course on rigorous analysis are the only essential prerequisites, making this text suitable for both lecture courses and for self-study. Hints and solutions can be found on the authors website, which can be reached from www.cambridge.org/9780521615259.

Contents: Prelude; Dependence chart; Prologue; 1. The pleasures of counting; 2. σ-algebras; 3. Measures; 4. Uniqueness of measures; 5. Existance of measures; 6. Measurable mappings; 7. Measurable functions; 8. Integration of positive functions; 9. Integrals of measurable functions and null sets; 10. Convergence theorems and their applications; 11. The function spaces; 12. Product measures and Fubini's theorem; 13. Integrals with respect to image measures; 14. Integrals of images and Jacobi's transformation rule; 15. Uniform integrability and Vitali's convergence theorem; 16. Martingales; 17. Martingale convergence theorems; 18. The Radon-Nikodym theorem and other applications of martingales; 19. Inner product spaces; 20. Hilbert space; 21. Conditional expectations in L^2; 22. Conditional expectations in L^p; 23. Orthonormal systems and their convergence behaviour; Appendix A: Lim inf and lim supp; Appendix B: Some facts from point-set topology; Appendix C: The volume of a parallelepiped; Appendix D: Non-measurable sets; Appendix E: A summary of the Riemann integral; Further reading; Bibliography; Notation index; Name and subject index.

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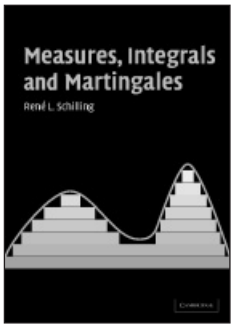

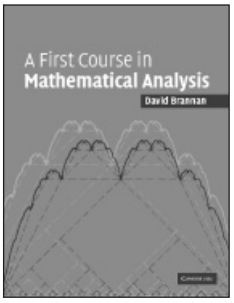

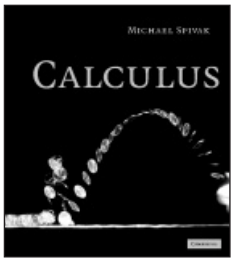

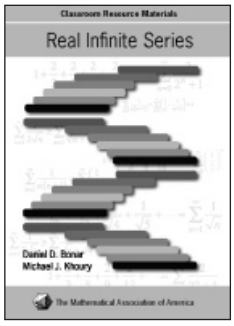

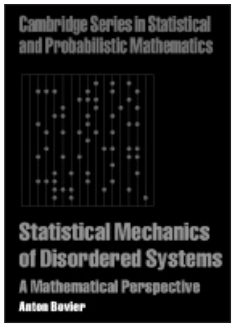

Markov Processes, Gaussian Processes, and Local Times

Michael B. Marcus
City University of New York
and Jay Rosen
City University of New York

Two leading researchers present important advances in stochastic process theory by linking well understood (Gaussian) and less well understood (Markov) classes of processes. They build to this material through 'mini-courses' on the relevant ingredients, which assume only measure-theoretic probability. This original, readable book is for researchers and advanced graduate students.

Cambridge Studies in Advanced Mathematics, 100

– 2006 228 x 152 mm c. 640pp
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An Introduction

Adam Bobrowski
Politechnika Lubelska, Poland

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Jean Bertoin
Université de Paris VI (Pierre et Marie Curie)

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Cambridge Studies in Advanced Mathematics, 102

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Lectures on the Combinatorics of Free Probability

A. Nica
University of Waterloo, Ontario
and R. Speicher
Queen's University, Ontario

This book is the first to give a self-contained and comprehensive introduction to free probability theory and has its main focus on the combinatorial aspects. It can be used as a textbook for an introductory graduate level course, and is also well-suited for the individual study of free probability.

Cambridge Tracts in Mathematics, 335

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Technische Universität Berlin and Weierstrasse-Institut für Angewandte Analysis und Stochastik

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Andrew Markoe
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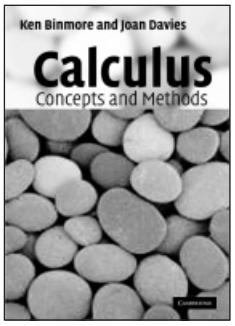
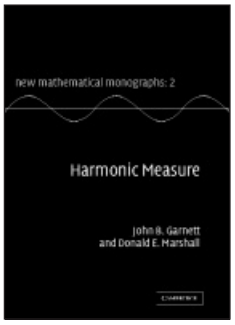
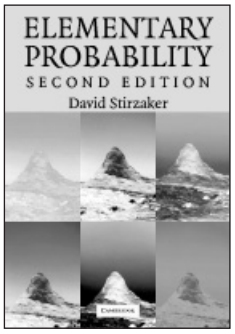
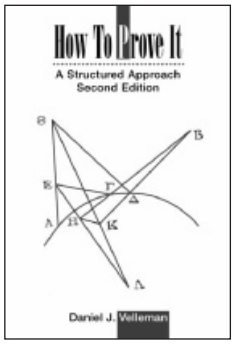
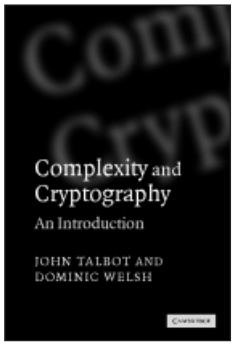


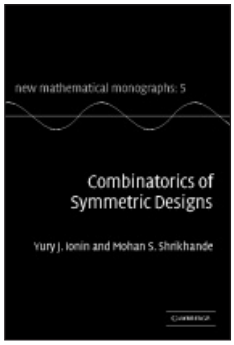




Foundations and Discrete Mathematics







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T. Tao
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Hardback c. £75.00
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James Anderson
University of South Carolina

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Yury Ionin
Central Michigan University
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Central Michigan University

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Edited by Bridget S. Webb
The Open University, Milton Keynes

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TEXTBOOK

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Peter J. Eccles
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Australian National University, Canberra

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– 2006 247 x 174 mm 448pp
– 978 0 521 84493 2 (0 521 84493 2)
Hardback c. £25.00
– **Publication October 2006**

▼ FEATURE TITLE

TEXTBOOK

Geometry and Topology

Miles Reid
University of Warwick

and Balazs Szendroi
University of Oxford

Geometry aims to describe the world around us. It is central to many branches of mathematics and physics, and offers a whole range of views on the universe. This is an introduction to the ideas of geometry and includes generous helpings of simple explanations and examples. The book is based on many years teaching experience so is thoroughly class-tested, and as prerequisites are minimal, it is suited to newcomers to the subject. There are plenty of illustrations; chapters end with a collection of exercises, and solutions are available for teachers.

Contents: 0. Introduction; 1. Euclidean geometry; 2. Composing maps; 3. Non-Euclidean; 4. Affine geometry; 5. Projective geometry; 6. Geometry and group theory; 7. Topology; 8. Geometry of transformation groups; 9. Concluding remarks; A. Metrics; B. Linear algebra; References; Index.

– 2005 247 x 174 mm 240pp
92 line diagrams 1 half-tone 156 exercises
92 figures
– 978 0 521 84889 3 (0 521 84889 X)
Hardback £55.00
– 978 0 521 61325 5 (0 521 61325 6)
Paperback £24.99

Introduction to Circle Packing

The Theory of Discrete Analytic Functions

Kenneth Stephenson
University of Tennessee

This book introduces a new mathematical topic known as 'circle packing', taking the reader from first definitions to late-breaking results. It can be enjoyed for visual appeal, the elegance of circle geometry, the clean theory, classical connections, or applications. There are intriguing, often very accessible, open problems throughout the book and seven Appendices on subtopics of independent interest.

Contents: Part I. An Overview of Circle Packing: 1. A circle packing menagerie; 2. Circle packings in the wild; Part II. Rigidity: Maximal Packings: 3. Preliminaries: topology, combinatorics, and geometry; 4. Statement of the fundamental result; 5. Bookkeeping and monodromy; 6. Proof for combinatorial closed discs; 7. Proof for combinatorial spheres; 8. Proof for combinatorial open discs; 9. Proof for combinatorial surfaces; Part III. Flexibility: Analytic Functions: 10. The intuitive landscape; 11. Discrete analytic functions; 12. Construction tools; 13. Discrete analytic functions on the disc; 14. Discrete entire functions; 15. Discrete rational functions; 16. Discrete analytic functions on Riemann surfaces; 17. Discrete conformal structure; 18. Random walks on circle packings; Part IV: 19. Thurston's Conjecture; 20. Extending the Rodin/Sullivan theorem; 21. Approximation of analytic functions; 22. Approximation of conformal structures; 23. Applications; Appendix A. Primer on classical complex analysis; Appendix B. The ring lemma; Appendix C. Doyle spirals; Appendix D. The brooks parameter; Appendix E. Schwarz and buckyballs; Appendix F. Inversive distance packings; Appendix G. Graph embedding; Appendix H. Square grid packings; Appendix I. Experimenting with circle packings.

– 2005 253 x 177 mm 368pp
190 line diagrams 10 colour plates
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Keith Kendig
Cleveland State University

Conics is written in an easy, conversational style. This book is ideal for anyone having a little exposure to linear algebra and complex numbers.

Dolciani Mathematical Expositions, 29

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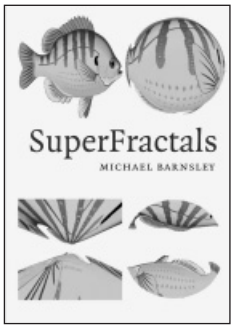
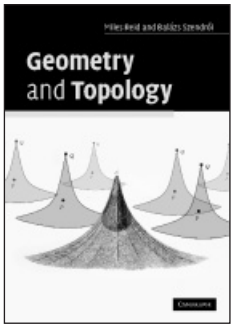
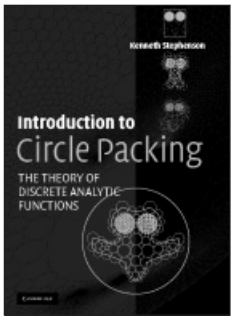
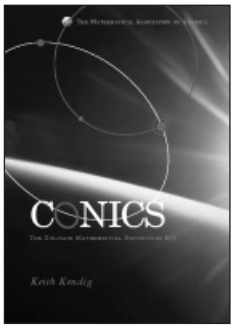
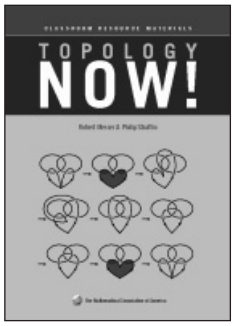










Synthetic Differential Geometry

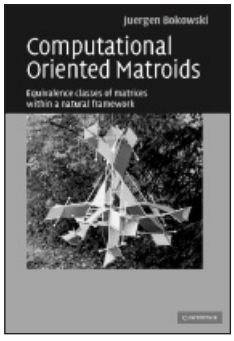
Second edition

Anders Kock
Aarhus Universitet, Denmark

Synthetic Differential Geometry is a method of reasoning in differential geometry and calculus, use of nilpotent elements allows the replacement of the limit processes of calculus by purely algebraic notions. In this second edition of Kock's classical text many notes have been included commenting on new developments in the field.

London Mathematical Society Lecture Note Series, 333

– 2006 228 x 152 mm c. 240pp
4 line diagrams 142 exercises
– 978 0 521 68738 6 (0 521 68738 1)
Paperback c. £27.99
– **Publication July 2006**



Poisson Geometry, Deformation Quantisation and Group Representations

Edited by Simone Gutt
Université Libre de Bruxelles
John Rawnsley
University of Warwick
and Daniel Sternheimer
Université de Bourgogne, France

An accessible introduction to Poisson geometry suitable for graduate students.

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London Mathematical Society Lecture Note Series, 323

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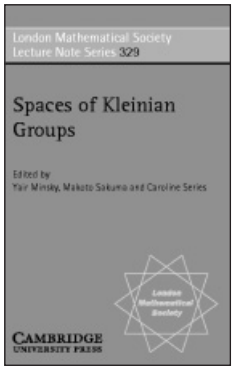

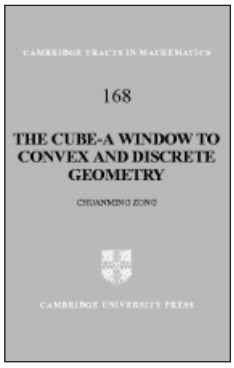

Noncommutative Localization in Algebra and Topology

Edited by Andrew Ranicki
University of Edinburgh

Noncommutative localization is a powerful algebraic technique for constructing new rings by inverting elements, matrices and more generally morphisms of modules. It is now an important tool not only in pure algebra but also in the topology of non-simply-connected spaces, algebraic geometry and noncommutative geometry.

London Mathematical Society Lecture Note Series, 330

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Juergen Bokowski
Technische Universität, Darmstadt, Germany

The combination of concrete applications and computation, the profusion of illustations, and the large number of examples and exercises will make this an ideal introductory text on the subject. It will also be valuable for self-study for mathematicians and computer scientists working in discrete and computational geometry.

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150 line diagrams 50 half-tones 150 figures
– 978 0 521 84930 2 (0 521 84930 6)
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Topology Now!

Robert Messer
Albion College, Michigan
and Philip Straffin
Beloit College, Wisconsin

Topology is a branch of mathematics packed with intriguing concepts, fascinating geometrical objects, and ingenious methods for studying them. The authors approach in this textbook is to cultivate the intuitive ideas of continuity, convergence, and connectedness so students can discover the exciting geometrical ideas of topology now(!) rather than later.

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120 line diagrams 397 exercises 120 figures
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Hardback c. £30.00
– **Publication May 2006**

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Edited by Yair Minsky
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Makoto Sakuma
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and Caroline Series
University of Warwick

The subject of Kleinian groups and hyperbolic 3-manifolds is currently undergoing explosively fast development. This volume contains important expositions on topics such as topology and geometry of 3-manifolds, curve complexes, classical Ahlfors-Bers theory and computer explorations. Researchers in these and related areas will find much of interest here.

London Mathematical Society Lecture Note Series, 329

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68 line diagrams 10 tables
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Cambridge Studies in Advanced Mathematics, 98

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– **Publication May 2006**

The Cube: A Window to Convex and Discrete Geometry

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This tract has two purposes: to show what is known about the n-dimensional unit cubes and to demonstrate how Analysis, Algebra, Combinatorics, Graph Theory, Hyperbolic Geometry, Number Theory, can be applied to the study of them.

Cambridge Tracts in Mathematics, 168

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Global Analysis on Foliated Spaces

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and Claude L. Schochet
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Mathematical Sciences Research Institute Publications, 9

– 2006 234 x 156 mm 296pp
– 978 0 521 61305 7 (0 521 61305 1)
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Allen Hatcher
Cornell University, New York

'… the truly unusual abundance of instructive examples and complementing exercises is absolutely unique … the distinctly circumspect, methodologically inductive, intuitive, descriptively elucidating and very detailed style of writing give evidence to the fact that the author's first priorities are exactly what students need when working with such a textbook, namely clarity, readability, steady motivation, guided inspiration, increasing demand, and as much self-containedness of the exposition as possible. No doubt, a very devoted and experienced teacher has been at work here, very much so to the benefit of beginners in the field of algebraic topology, instructors, and interested readers in general.'
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TEXTBOOK

Elementary Number Theory in Nine Chapters

Second edition

James J. Tattersall
Providence College, Rhode Island

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Contents: 1. The intriguing natural numbers; 2. Divisibility; 3. Prime numbers; 4. Perfect and amicable numbers; 5. Modular arithmetic; 6. Congruences of higher degree; 7. Cryptography; 8. Representations; 9. Partitions; Tables; Answers to selected exercises; Bibliography.

– 2005 228 x 152 mm 442pp 20 tables 200 exercises
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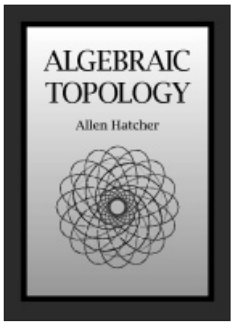
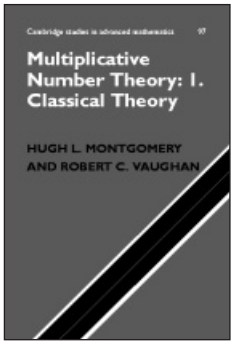
Multiplicative Number Theory I

Classical Theory

Hugh L. Montgomery
University of Michigan, Ann Arbor
and R.C Vaughan
Pennsylvania State University

Prime numbers are the multiplicative building blocks of natural numbers. Understanding their overall influence and especially their distribution gives rise to central questions in mathematics and physics. The authors bring their extensive and distinguished research expertise to prepare the student for intelligent reading of the more advanced research literature.





Contents: Preface; Notation; 1. Dirichlet series-I; 2. The elementary theory of arithmetic functions; 3. Principles and first examples of sieve methods; 4. Primes in arithmetic progressions-I; 5. Dirichlet series-II; 6. The prime number theorem; 7. Applications of the prime number theorem; 8. Further discussion of the prime number theorem; 9. Primitive characters and Gauss sums; 10. Analytic properties of the zeta function and L-functions; 11. Primes in arithmetic progressions-II; 12. Explicit formulae; 13. Conditional estimates; 14. Zeros; 15. Oscillations of error terms; Appendix A. The Riemann-Stieltjes integral; Appendix B. Bernoulli numbers and the Euler-MacLaurin summation formula; Appendix C. The gamma function; Appendix D. Topics in harmonic analysis.

Cambridge Studies in Advanced Mathematics, 97

– 2006 228 x 152 mm 650pp 510 exercises 7 figures
– 978 0 521 84903 6 (0 521 84903 9)
Hardback c. £45.00
– **Publication April 2006**

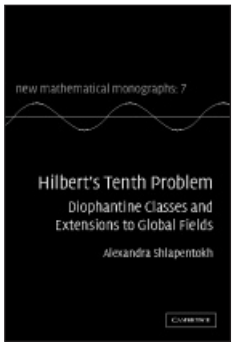
Recent Perspectives in Random Matrix Theory and Number Theory

Edited by F. Mezzadri
University of Bristol
and N. C. Snaith
University of Bristol

In recent years the application of random matrix techniques to analytic number theory has been responsible for major advances in this area of mathematics. The aim of this book is to provide the necessary grounding as well as to inform the reader of recent progress.

London Mathematical Society Lecture Note Series, 322

– 2005 228 x 152 mm 528pp
– 978 0 521 62058 1 (0 521 62058 9)
Paperback £38.00



An Introduction to Sieve Methods and Their Applications

Alina Carmen Cojocaru
Princeton University, New Jersey
and M. Ram Murty
Queen's University, Ontario

This book provides a motivated introduction to sieve theory. Rather than focus on technical details which obscure the beauty of the theory, the authors focus on examples and applications, developing the theory in parallel. Suitable for a senior level undergraduate course or an introductory graduate course in analytic number theory.

London Mathematical Society Student Texts, 66

– 2005 228 x 152 mm 280pp 275 exercises
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Hardback £50.00
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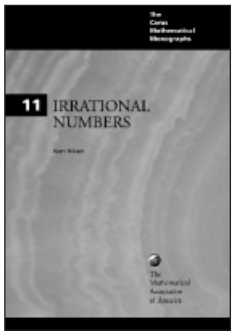

Heights in Diophantine Geometry

Enrico Bombieri
Princeton University, New Jersey
and Walter Gubler
Universität Dortmund

Diophantine geometry has been studied by number theorists for thousands of years. This monograph is a bridge between the classical theory and modern approach via arithmetic geometry. The treatment is largely self-contained, with proofs given in full detail. Many results appear here for the first time.

New Mathematical Monographs, 4

– 2006 228 x 152 mm 674pp
4 line diagrams 4 figures
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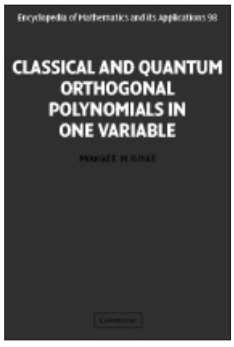
Hardback £75.00



Elliptic Functions

V. Armitage
University of Durham

This treatment of Jacobi elliptic functions seeks to answer the fascinating question: 'what would the treatment of elliptic functions have been like if Abel had developed the ideas, rather than Jacobi?' A rich variety of applications of the elliptic and related functions are also presented.

London Mathematical Society Student Texts, 67

– 2006 228 x 152 mm 420pp
25 line diagrams 5 tables 25 figures
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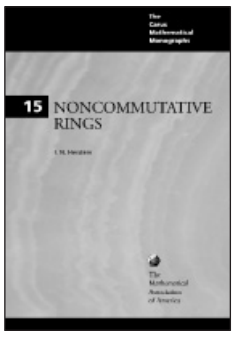
Hardback c. £50.00
– 978 0 521 78563 1 (0 521 78563 4)
Paperback c. £24.95
– **Publication June 2006**



Automorphic Forms and L-Functions for the Group GL(n,R)

Dorian Goldfeld
Columbia University, New York

L-functions associated to automorphic forms encode all classical number theoretic information. They are akin to elementary particles in physics. This book provides an entirely self-contained introduction to the theory of L-functions in a style accessible to graduate students with basic knowledge of classical analysis, complex variable theory, and algebra.

Cambridge Studies in Advanced Mathematics, 99

– 2006 228 x 152 mm 430pp
– 978 0 521 83771 2 (0 521 83771 5)
Hardback c. £48.00
– **Publication June 2006**

Hilbert's Tenth Problem
Diophantine Classes and Extensions to Global Fields

Alexandra Shlapentokh
East Carolina University

Hilbert's Tenth Problem – to find an algorithm to determine whether a polynomial equation in several variables with integer coefficients has integer solutions – was shown to be unsolvable in the late sixties. This book presents an account of results extending Hilbert's Tenth Problem to integrally closed subrings of global fields.

New Mathematical Monographs, 7

– 2006 228 x 152 mm 370pp
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Ivan Niven provides a masterful exposition of some central results on irrational, transcendental, and normal numbers. He gives a complete treatment by elementary methods of the irrationality of the exponential, logarithmic, and trigonometric functions with rational arguments.

Carus Mathematical Monographs, 11

– 2005 228 x 152 mm 228pp
– 978 0 883 85038 1 (0 883 85038 9)
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Algorithmic Number Theory

Edited by J. P. Buhler
Reed College, Oregon
and P. Stevenhagen
Universiteit Leiden

This comprehensive introduction for beginning graduate students contains articles by the leading experts in the field. It covers basic topics such as algorithmic aspects of number fields, elliptic curves, and lattice basis reduction and advanced topics including cryptography, computational class field theory, zeta functions and L-series, and quantum computing.

Mathematical Sciences Research Institute Publications, 44

– 2006 234 x 156 mm 320pp
– 978 0 521 80854 5 (0 521 80854 5)
Hardback c. £40.00
– **Publication September 2006**

Classical and Quantum Orthogonal Polynomials in One Variable

Mourad E. H. Ismail
University of South Florida

This is the first modern account of the subject, written by one of world's leading researchers in the area. Much material appears here for the first time in book form. The comprehensive bibliography, and collection of open research problems and exercises will make this an invaluable reference and graduate text.

Encyclopedia of Mathematics and its Applications, 98

– 2005 236 x 154 mm 688pp
1 line diagram 80 exercises
– 978 0 521 78201 2 (0 521 78201 5)
Hardback £80.00

Noncommutative Rings

I. N. Herstein
University of Chicago

A classic advanced textbook, containing a cross-section of ideas, techniques and results that give the reader an unparalleled introductory overview of the subject. The author gives an integrated presentation of overall theory and its applications in, for example, the study of groups of matrices, and group representations.

Carus Mathematical Monographs, 15

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Lie Algebras of Finite and Affine Type

Roger Carter
University of Warwick

Lie algebras have many varied applications, both in mathematics and mathematical physics. This book provides a thorough but relaxed mathematical treatment of the subject. Proofs are given in detail and the only prerequisite is a sound knowledge of linear algebra. A detailed Appendix is included.

Cambridge Studies in Advanced Mathematics, 96

– 2005 228 x 152 mm 540pp
10 line diagrams
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Hardback £45.00

Central Simple Algebras and Galois Cohomology

Philippe Gille
Centre National de la Recherche Scientifique (CNRS), Paris

and Tamás Szamuely
Alfréd Rényi Institute of Mathematics, Hungarian Academy of Sciences, Budapest

The first comprehensive, modern introduction to the theory of central simple algebras over arbitrary fields. Assuming only a solid background in algebra, it reaches such advanced results as the Merkurjev-Suslin theorem. It is a graduate textbook and a reference for researchers working in algebra, algebraic geometry or K-theory.

Cambridge Studies in Advanced Mathematics, 101

– 2006 228 x 152 mm 356pp 80 exercises
– 978 0 521 86103 8 (0 521 86103 9)
Hardback c. £45.00
– **Publication June 2006**

Elements of the Representation Theory of Associative Algebras

Techniques of Representation Theory

Volume 1

I. Assem
Université de Sherbrooke, Canada

A. Skowronski
Uniwersytet Mikolaja Kopernika, Poland

and D. Simson
Uniwersytet Mikolaja Kopernika, Poland

The aim of this book is to provide an elementary but up-to-date introduction to the representation theory of algebras. Representation-finite and representation-infinite cases are both covered in detail with many concrete examples to illustrate the theory. The treatment is accessible to beginning graduate students and researchers in related areas.

London Mathematical Society Student Texts, 65

– 2006 228 x 152 mm 472pp
– 978 0 521 58423 4 (0 521 58423 X)
Hardback £55.00
– 978 0 521 58631 3 (0 521 58631 3)
Paperback £26.00
– **Publication April 2006**

Modular Representations of Finite Groups of Lie Type

James E. Humphreys
University of Massachusetts, Amherst

The first comprehensive treatment of the representation theory of finite groups of Lie type over a field of the defining prime characteristic. Ordinary and modular representations are explored in the context of Deligne-Lusztig characters. This treatment is accessible to researchers in neighbouring parts of group theory, number theory, and topology.

London Mathematical Society Lecture Note Series, 326

– 2005 228 x 152 mm 220pp 30 tables
4 figures
– 978 0 521 67454 6 (0 521 67454 9)
Paperback £30.00

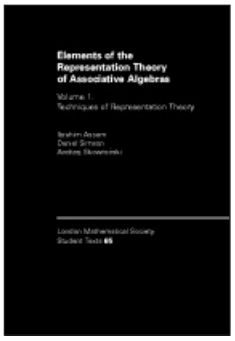
Free Ideal Rings and Localization in General Rings

Paul Cohn
University College London

This book presents the theory of free ideal rings (firs) in detail. Particular emphasis is placed on rings with a weak algorithm, exemplified by free associative algebras, and there is also a full account of localization. Each chapter has a number of exercises plus open problems and historical notes.

New Mathematical Monographs, 3

– 2006 228 x 152 mm 704pp
38 line diagrams 864 exercises 19 figures
– 978 0 521 85337 8 (0 521 85337 0)
Hardback £75.00
– **Publication April 2006**



Handbook of Tilting Theory

Edited by Henning Krause
Universität-Gesamthochschule Paderborn, Germany

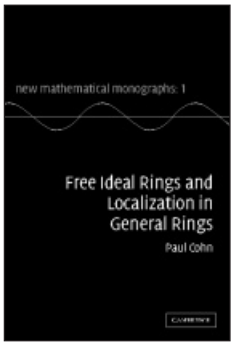
Dieter Happel
Technische Universität Chemnitz-Zwickan, Germany

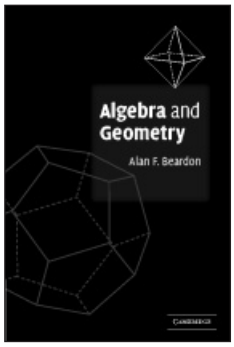
and Lidia Angeleri Huegel
Università degli Studi dell'Insubria, Italy

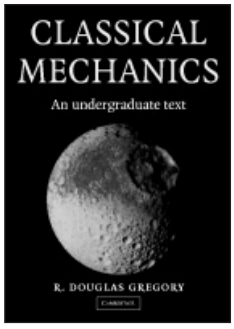
Tilting theory originates in the representation theory of finite dimensional algebras. Today the subject of this book is of much interest in various areas of mathematics, like finite and algebraic group theory, commutative and non-commutative algebraic geometry, and algebraic topology. The aim of this book is to present the basic concepts of tilting theory as well as the variety of applications. It contains a collection of key articles, which together form a handbook of the subject, and provide an both an introduction and reference for newcomers and experts alike.

London Mathematical Society Lecture Note Series, 332

– 2006 228 x 152 mm c. 400pp
– 978 0 521 68045 5 (0 521 68045 X)
Paperback c. £29.99
– **Publication March 2006**







Theory of Finite Simple Groups

Gerhard Michler
Universität Duisberg, Essen

This book provides the first representation theoretic and algorithmic approach to the theory of abstract finite simple groups. Concrete applications are demonstrated in the construction of the simple satellites of the known simple groups which are not uniquely determined by a given centralizer.

New Mathematical Monographs, 8

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University of Kansas

and Irena Swanson
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London Mathematical Society Lecture Note Series, 336

– 2006 228 x 152 mm c. 350pp
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Encyclopedia of Mathematics and its Applications, 108

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and Garrett J. Stuck
University of Maryland, College Park

This is a short, focused introduction to MATLAB, a comprehensive software system for mathematical and technical computing. It contains concise explanations of essential MATLAB commands, as well as easily understood instructions for using MATLAB's programming features, graphical capabilities, simulation models, and rich desktop interface. For the beginner it explains everything needed to start using MATLAB, while experienced users making the switch to MATLAB 7 from an earlier version will also find much useful information here.

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North Carolina State University

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– 2007 228 x 152 mm c. 480pp
– 978 0 521 86197 7 (0 521 86197 7)
Hardback c. £50.00
– **Publication June 2007**

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Chaotic Dynamics

Tamás Tél
Loránd Eötvös University, Budapest
and Márton Gruiz
Loránd Eötvös University, Budapest

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Foundations of Computational Mathematics, Santander 2005

Edited by Luis Pardo
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Allan Pinkus
Technion – Israel Institute of Technology, Haifa
Endre Suli
University of Oxford
and Mike Todd
Cornell University, New York

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London Mathematical Society Lecture Note Series, 331

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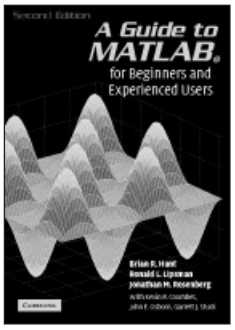

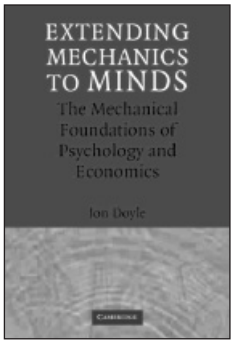

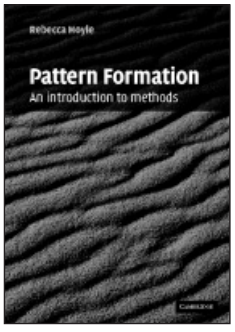

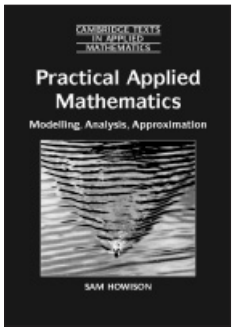

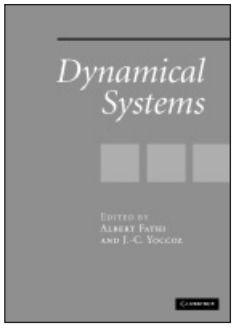

The Mathematical Foundations of Mixing

The Linked Twist Map as a Paradigm in Applications: Micro to Macro, Fluids to Solids

Rob Sturman
University of Bristol

Julio Ottino
Northwestern University

and Stephen Wiggins
University of Bristol

Linked Twist Maps can provide a unifying framework for understanding many types of fluid mixing, ranging from the very small to the very large, from fluid to solids. The authors discuss the definition and construction of LTMs, provide examples of specific mixers, and present a number of open problems.

Cambridge Monographs on Applied and Computational Mathematics, 22

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University of Oxford

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Cambridge Texts in Applied Mathematics, 38

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and J.-C. Yoccoz
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Cambridge Monographs on Applied and Computational Mathematics, 21

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University of Reading

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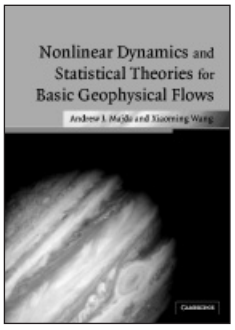

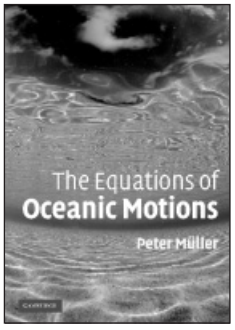

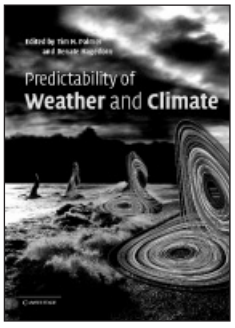

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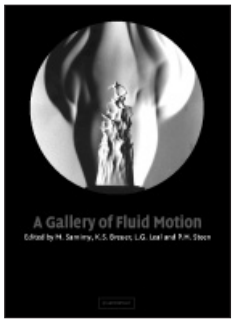

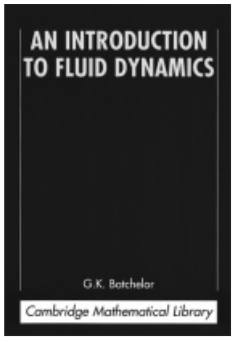

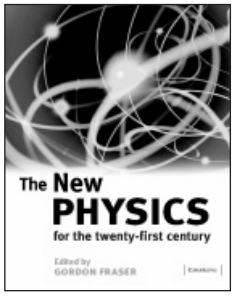

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A Comprehensive Guide

Third edition

K. F. Riley
University of Cambridge
M. P. Hobson
University of Cambridge
and S. J. Bence

The third edition of this highly acclaimed undergraduate textbook is ideal for teaching all the mathematics for an undergraduate course in any of the physical sciences. As well as lucid descriptions of all the topics and many worked examples, it contains over 800 exercises. Half of these are provided with hints and answers and, in a separate manual available to both students and their teachers, complete worked solutions. The remaining exercises are intended for unaided homework; full solutions are available to instructors at www.cambridge.org/9780521679718.

- Contains all the mathematical material likely to be needed for any undergraduate course in the physical sciences
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TEXTBOOK SET

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Mathematical Methods for Physics and Engineering

Ken F. Riley
University of Cambridge
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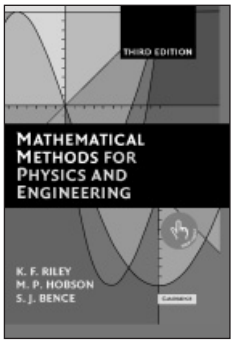

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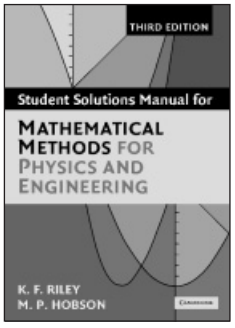
Marián Fecko
Comenius University, Bratislava



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University of Alberta

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Cambridge Monographs on Mathematical Physics

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82 line diagrams 9 tables 187 exercises
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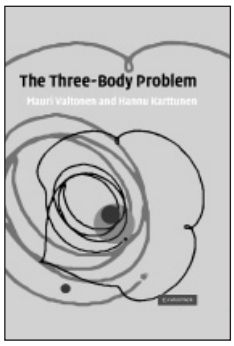

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The book surveys statistical and perturbation methods for the solution of the general three body problem, providing solutions based on combining orbit calculations with semi-analytic methods for the first time. This book is essential reading for students in this rapidly expanding field.

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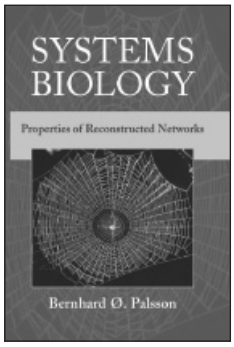

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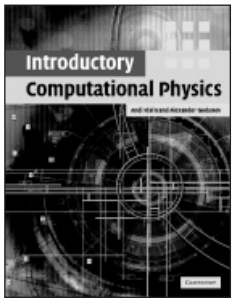

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Stockholms Universitet

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Algebraic Statistics for Computational Biology

Edited by L. Pachter
University of California, Berkeley
and B. Sturmfels
University of California, Berkeley

This book explains how computational algebra provides tools for designing new algorithms for exact, accurate results in the quantitative analysis of biological sequence data. These are applied to biological problems such as aligning genomes, finding genes and constructing phylogenies. As the first book in the exciting and dynamic area, it will be welcomed as a text for self-study or for course use.

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A Case Studies Approach

Nello Cristianini
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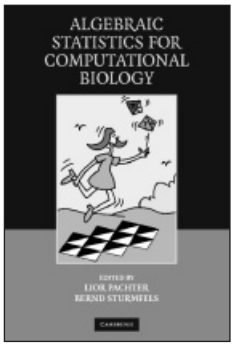

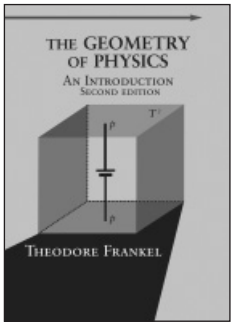

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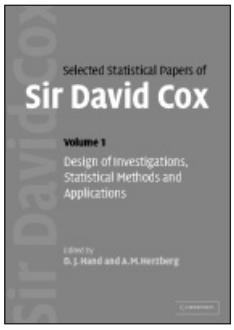

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David Cox
Nuffield College, Oxford
Edited by D. J. Hand
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Sir David Cox is one of the seminal statistical thinkers of the twentieth and twenty-first centuries. In this selection of his work, Professor Cox reviews his most influential and interesting papers published before 1993. Each paper is the subject of a candid commentary written especially for this collection. He describes the context in which the papers arose and their subsequent influence. He also identifies avenues for future research. Together, the papers and commentaries provide excellent coverage of many of the most significant advances in statistics in recent times.

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Gerard Cornuejols
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Mathematics, Finance and Risk, 5

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With contributions by Christine Ziehmann

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TEXTBOOK

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Karim M. Abadir
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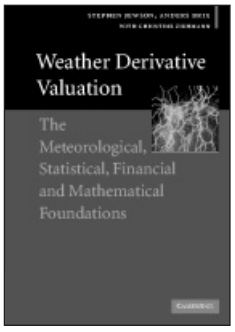

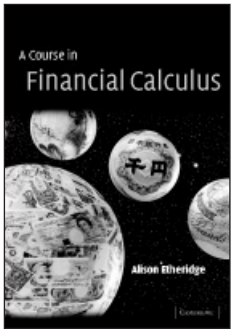

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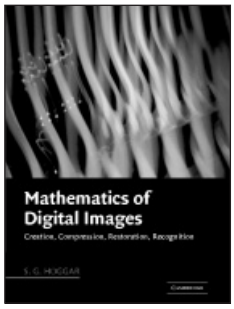

TEXTBOOK

Protecting Information

From Classical Error Correction to Quantum Cryptography

Susan Loepp
Williams College, Massachusetts
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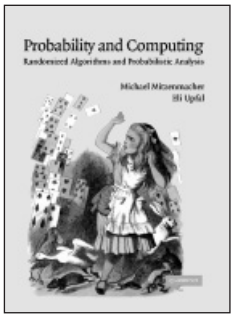

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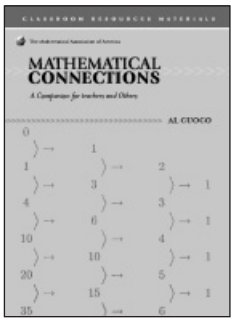

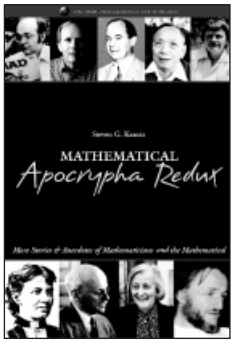

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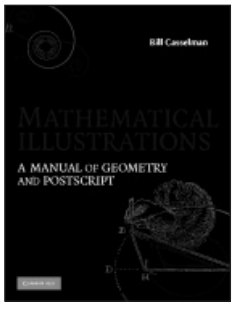

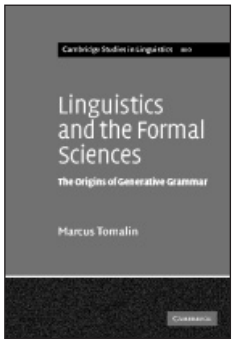

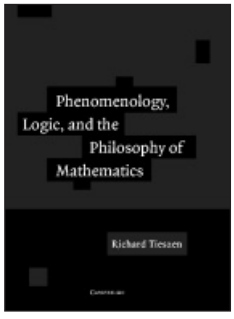

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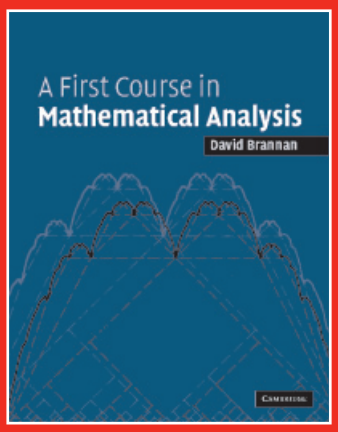

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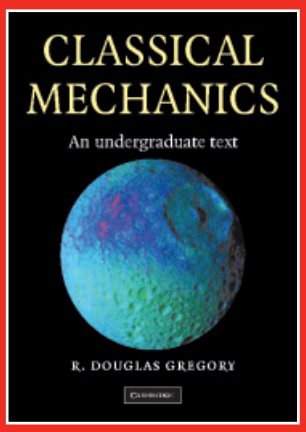

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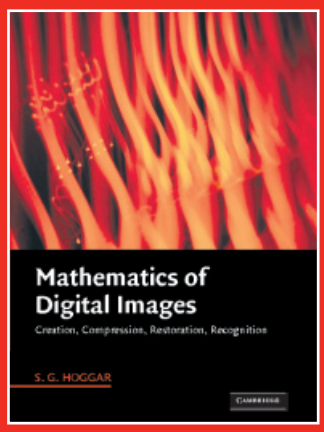

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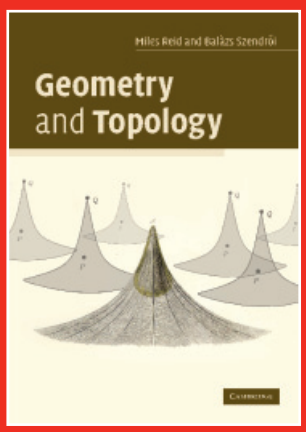

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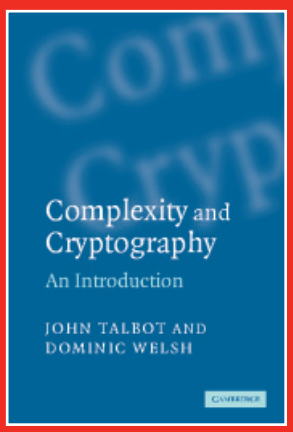

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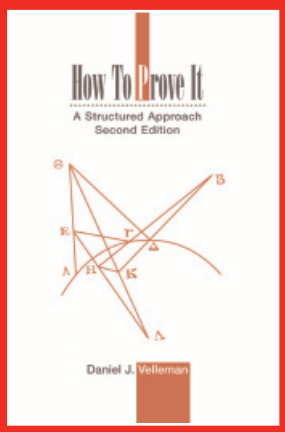

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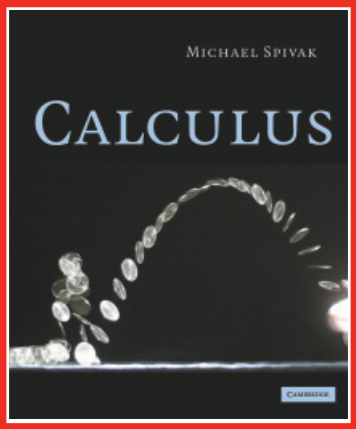

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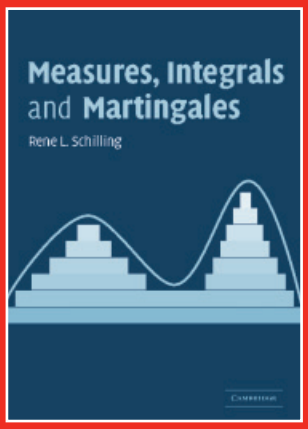

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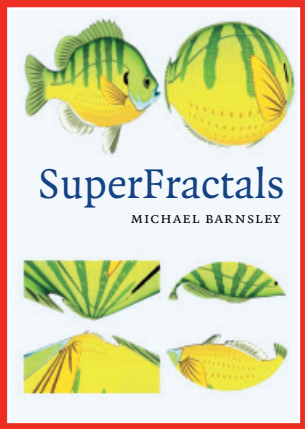

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