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## **KEY=MATHEMATICAL - SANFORD KHAN**

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### **MATHEMATICAL STUDIES STANDARD LEVEL FOR THE IB DIPLOMA COURSEBOOK**

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*Cambridge University Press* **This completely new title is written to specifically cover the new IB Diploma Mathematical Studies syllabus. The significance of mathematics for practical applications is a prominent theme throughout this coursebook, supported with Theory of Knowledge, internationalism and application links to encourage an appreciation of the broader contexts of mathematics. Mathematical modelling is also a key feature. GDC tips are integrated throughout, with a dedicated GDC chapter for those needing more support. Exam hints and IB exam-style questions are provided within each chapter; sample exam papers (online) can be tackled in exam-style conditions for further exam preparation. Guidance and support for the internal assessment is also available, providing advice on good practice when writing the project.**

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### **MATHEMATICS FOR THE INTERNATIONAL STUDENT: WORKED SOLUTIONS**

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### **EQUITY**

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*OUP Oxford* **This second edition of Sarah Worthington's Equity maintains the clear ambitions of the first. It sets out the basic principles of equity, and illustrates them by reference to commercial and domestic examples of their operation. The book comprehensively and succinctly describes the role of equity in creating and developing rights and**

obligations, remedies and procedures that differ in important ways from those provided by the common law itself. Worthington delivers a complete reworking of the material traditionally described as equity. In doing this, she provides a thorough examination of the fundamental principles underpinning equity's most significant incursions into the modern law of property, contract, tort, and unjust enrichment. In addition, she exposes the possibilities, and the need, for coherent substantive integration of common law and equity. Such integration she perceives as crucial to the continuing success of the modern common law legal system. This book provides an accessible and elementary exploration of equity's place in our modern legal system, whilst also tackling the most taxing and controversial questions which our dual system of law and equity raises.

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## **MATHEMATICS FOR THE IB DIPLOMA: APPLICATIONS AND INTERPRETATION HL**

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### **APPLICATIONS AND INTERPRETATION HL**

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*Hachette UK* Enable students to construct mathematical models by exploring challenging problems and the use of technology. - Engage and excite students with examples and photos of maths in the real world, plus inquisitive starter activities to encourage their problem-solving skills. - Build mathematical thinking with our 'Toolkit' and mathematical exploration chapter, along with our new toolkit feature of questions, investigations and activities. - Develop understanding with key concepts and applications integrated throughout, along with TOK links for every topic. - Prepare your students for assessment with worked examples, extended essay support and colour-coded questions to highlight the level of difficulty and the different types of questions. - Check understanding with review exercise at the end of the textbook. Follows the new 2019 IB Guide for Mathematics: applications and interpretation Higher Level Available in the series Mathematics for the IB Diploma: Analysis and approaches SL Student Book ISBN: 9781510462359 Student eTextbook ISBN: 9781510461895 Whiteboard eTextbook ISBN: 9781510461901 Mathematics for the IB Diploma: Analysis and approaches HL Student Book ISBN: 9781510462366 Student eTextbook ISBN: 9781510461857 Whiteboard eTextbook ISBN: 9781510461864 SL & HL Teaching & Learning Resources ISBN: 9781510461918 Mathematics for the IB Diploma: Applications and interpretation SL Student Book ISBN: 9781510462380 Student eTextbook ISBN: 9781510461994 Whiteboard eTextbook ISBN: 9781510462007 Mathematics for the IB Diploma: Applications and interpretation HL Student Book ISBN: 9781510462373 Student eTextbook ISBN: 9781510461956 Whiteboard eTextbook ISBN: 9781510461963 SL and HL Teaching & Learning Resources ISBN: 9781510462014 Dynamic learning packages (include Teaching & Learning resources and Whiteboard eTextbooks)

**Analysis & approaches SL & HL ISBN: 9781510461925 Applications and interpretation SL and HL ISBN: 9781510462021  
Analysis & approaches SL & HL and Applications and interpretation SL and HL ISBN: 9781510468474**

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## **FRACTALS IN PROBABILITY AND ANALYSIS**

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*Cambridge University Press* **A mathematically rigorous introduction to fractals, emphasizing examples and fundamental ideas while minimizing technicalities.**

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## **GAUSS SUMS, KLOOSTERMAN SUMS, AND MONODROMY GROUPS**

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*Princeton University Press* **The study of exponential sums over finite fields, begun by Gauss nearly two centuries ago, has been completely transformed in recent years by advances in algebraic geometry, culminating in Deligne's work on the Weil Conjectures. It now appears as a very attractive mixture of algebraic geometry, representation theory, and the sheaf-theoretic incarnations of such standard constructions of classical analysis as convolution and Fourier transform. The book is simultaneously an account of some of these ideas, techniques, and results, and an account of their application to concrete equidistribution questions concerning Kloosterman sums and Gauss sums.**

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## **MATHEMATICS HIGHER LEVEL (CORE)**

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## **IMAGINARY SCHUR-WEYL DUALITY**

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*American Mathematical Soc.* **The authors study imaginary representations of the Khovanov-Lauda-Rouquier algebras of affine Lie type. Irreducible modules for such algebras arise as simple heads of standard modules. In order to define standard modules one needs to have a cuspidal system for a fixed convex preorder. A cuspidal system consists of irreducible cuspidal modules—one for each real positive root for the corresponding affine root system  $X$ , as well as irreducible imaginary modules—one for each  $-$ -multiplication. The authors study imaginary modules by means of “imaginary Schur-Weyl duality” and introduce an imaginary analogue of tensor space and the imaginary Schur algebra. They construct a projective generator for the imaginary Schur algebra, which yields a Morita equivalence between the imaginary and the classical Schur algebra, and construct imaginary analogues of Gelfand-Graev representations, Ringel duality and the Jacobi-Trudy formula.**

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## PAPPUS OF ALEXANDRIA: BOOK 4 OF THE COLLECTION

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### EDITED WITH TRANSLATION AND COMMENTARY BY HEIKE SEFRIN-WEIS

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*Springer Science & Business Media* Although not so well known today, Book 4 of Pappus' Collection is one of the most important and influential mathematical texts from antiquity. The mathematical vignettes form a portrait of mathematics during the Hellenistic "Golden Age", illustrating central problems - for example, squaring the circle; doubling the cube; and trisecting an angle - varying solution strategies, and the different mathematical styles within ancient geometry. This volume provides an English translation of Collection 4, in full, for the first time, including: a new edition of the Greek text, based on a fresh transcription from the main manuscript and offering an alternative to Hultsch's standard edition, notes to facilitate understanding of the steps in the mathematical argument, a commentary highlighting aspects of the work that have so far been neglected, and supporting the reconstruction of a coherent plan and vision within the work, bibliographical references for further study.

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## MATHEMATICS SL

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*Damaris Publishing* This book provides practical support and guidance to help IB Diploma Programme students prepare for their mathematics SL exams.

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## A TOPOLOGICAL PICTUREBOOK

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*Springer Science & Business Media* Praise for George Francis's *A Topological Picturebook*: Bravo to Springer for reissuing this unique and beautiful book! It not only reminds the older generation of the pleasures of doing mathematics by hand, but also shows the new generation what "hands on" really means. - John Stillwell, University of San Francisco  
 The Topological Picturebook has taught a whole generation of mathematicians to draw, to see, and to think. - Tony Robbin, artist and author of *Shadows of Reality: The Fourth Dimension in Relativity, Cubism, and Modern Thought*  
 The classic reference for how to present topological information visually, full of amazing hand-drawn pictures of complicated surfaces. - John Sullivan, Technische Universitat Berlin  
 A Topological Picturebook lets students see topology as the original discoverers conceived it: concrete and visual, free of the formalism that burdens conventional textbooks. - Jeffrey Weeks, author of *The Shape of Space*  
 A Topological Picturebook is a visual feast for anyone concerned with mathematical images. Francis provides exquisite examples to build one's "visualization muscles". At

the same time, he explains the underlying principles and design techniques for readers to create their own lucid drawings. - George W. Hart, Stony Brook University In this collection of narrative gems and intriguing hand-drawn pictures, George Francis demonstrates the chicken-and-egg relationship, in mathematics, of image and text. Since the book was first published, the case for pictures in mathematics has been won, and now it is time to reflect on their meaning. A Topological Picturebook remains indispensable. - Marjorie Senechal, Smith College and co-editor of the Mathematical Intelligencer

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## UNIVALENT FUNCTIONS

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### A PRIMER

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*Walter de Gruyter GmbH & Co KG* The study of univalent functions dates back to the early years of the 20th century, and is one of the most popular research areas in complex analysis. This book is directed at introducing and bringing up to date current research in the area of univalent functions, with an emphasis on the important subclasses, thus providing an accessible resource suitable for both beginning and experienced researchers. Contents Univalent Functions - the Elementary Theory Definitions of Major Subclasses Fundamental Lemmas Starlike and Convex Functions Starlike and Convex Functions of Order  $\alpha$  Strongly Starlike and Convex Functions Alpha-Convex Functions Gamma-Starlike Functions Close-to-Convex Functions Bazilevič Functions  $B_1(\alpha)$  Bazilevič Functions The Class  $U(\lambda)$  Convolutions Meromorphic Univalent Functions Loewner Theory Other Topics Open Problems

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## DYNAMIC METEOROLOGY: DATA ASSIMILATION METHODS

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*Springer Science & Business Media* One of the main reasons we cannot tell what the weather will be tomorrow is that we do not know accurately enough what the weather is today. Mathematically speaking, numerical weather prediction (NWP) is an initial-value problem for a system of nonlinear partial differential equations in which the necessary initial values are known only incompletely and inaccurately. Data at the initial time of a numerical forecast can be supplemented, however, by observations of the atmosphere over a time interval preceding it. New observing systems, in particular polar-orbiting and geostationary satellites, which are providing observations continuously in time, make it absolutely necessary to find new and more satisfactory methods of assimilating meteorological observations - for the dual purpose of defining atmospheric states and of issuing forecasts from the states thus defined. Fundamental progress in this area has been made in recent years and this book attempts to give a review and some suggestions for

further improvements in the field of meteorological data assimilation methods. The European Centre for Medium Range Weather Forecasts (ECMWF) every year organises seminars for the benefit of meteorologists and geophysicists of the ECMWF Member states. The 1980 Seminar was devoted to data assimilation methods, and this book contains selected lectures from that seminar. The purpose of the seminar was twofold: it was intended to give a basic introduction to the subject, as well as an overview of the latest developments in the field.

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## COMPLEX FUNCTION THEORY

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*American Mathematical Soc.* **Complex Function Theory** is a concise and rigorous introduction to the theory of functions of a complex variable. Written in a classical style, it is in the spirit of the books by Ahlfors and by Saks and Zygmund. Being designed for a one-semester course, it is much shorter than many of the standard texts. Sarason covers the basic material through Cauchy's theorem and applications, plus the Riemann mapping theorem. It is suitable for either an introductory graduate course or an undergraduate course for students with adequate preparation. The first edition was published with the title *Notes on Complex Function Theory*.

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## COMPLEX VARIABLES

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*Courier Corporation* This text on complex variables is geared toward graduate students and undergraduates who have taken an introductory course in real analysis. It is a substantially revised and updated edition of the popular text by Robert B. Ash, offering a concise treatment that provides careful and complete explanations as well as numerous problems and solutions. An introduction presents basic definitions, covering topology of the plane, analytic functions, real-differentiability and the Cauchy-Riemann equations, and exponential and harmonic functions. Succeeding chapters examine the elementary theory and the general Cauchy theorem and its applications, including singularities, residue theory, the open mapping theorem for analytic functions, linear fractional transformations, conformal mapping, and analytic mappings of one disk to another. The Riemann mapping theorem receives a thorough treatment, along with factorization of analytic functions. As an application of many of the ideas and results appearing in earlier chapters, the text ends with a proof of the prime number theorem.

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## FUNCTIONS OF ONE COMPLEX VARIABLE

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*Springer Science & Business Media* This book is intended as a textbook for a first course in the theory of functions of one

complex variable for students who are mathematically mature enough to understand and execute E - I) arguments. The actual pre requisites for reading this book are quite minimal; not much more than a stiff course in basic calculus and a few facts about partial derivatives. The topics from advanced calculus that are used (e.g., Leibniz's rule for differentiating under the integral sign) are proved in detail. Complex Variables is a subject which has something for all mathematicians. In addition to having applications to other parts of analysis, it can rightly claim to be an ancestor of many areas of mathematics (e.g., homotopy theory, manifolds). This view of Complex Analysis as "An Introduction to Mathematics" has influenced the writing and selection of subject matter for this book. The other guiding principle followed is that all definitions, theorems, etc.

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### **A GUIDE TO DISTRIBUTION THEORY AND FOURIER TRANSFORMS**

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*World Scientific* This important book provides a concise exposition of the basic ideas of the theory of distribution and Fourier transforms and its application to partial differential equations. The author clearly presents the ideas, precise statements of theorems, and explanations of ideas behind the proofs. Methods in which techniques are used in applications are illustrated, and many problems are included. The book also introduces several significant recent topics, including pseudodifferential operators, wave front sets, wavelets, and quasicrystals. Background mathematical prerequisites have been kept to a minimum, with only a knowledge of multidimensional calculus and basic complex variables needed to fully understand the concepts in the book. A Guide to Distribution Theory and Fourier Transforms can serve as a textbook for parts of a course on Applied Analysis or Methods of Mathematical Physics, and in fact it is used that way at Cornell.

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### **OPTIMAL ANALYSIS OF STRUCTURES BY CONCEPTS OF SYMMETRY AND REGULARITY**

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*Springer Science & Business Media* Optimal analysis is defined as an analysis that creates and uses sparse, well-structured and well-conditioned matrices. The focus is on efficient methods for eigensolution of matrices involved in static, dynamic and stability analyses of symmetric and regular structures, or those general structures containing such components. Powerful tools are also developed for configuration processing, which is an important issue in the analysis and design of space structures and finite element models. Different mathematical concepts are combined to make the optimal analysis of structures feasible. Canonical forms from matrix algebra, product graphs from graph theory and symmetry groups from group theory are some of the concepts involved in the variety of efficient methods

and algorithms presented. The algorithms elucidated in this book enable analysts to handle large-scale structural systems by lowering their computational cost, thus fulfilling the requirement for faster analysis and design of future complex systems. The value of the presented methods becomes all the more evident in cases where the analysis needs to be repeated hundreds or even thousands of times, as for the optimal design of structures by different metaheuristic algorithms. The book is of interest to anyone engaged in computer-aided analysis and design and software developers in this field. Though the methods are demonstrated mainly through skeletal structures, continuum models have also been added to show the generality of the methods. The concepts presented are not only applicable to different types of structures but can also be used for the analysis of other systems such as hydraulic and electrical networks.

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### **NONLINEAR FUNCTIONAL ANALYSIS AND ITS APPLICATIONS**

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*MDPI* This book consists of nine papers covering a number of basic ideas, concepts, and methods of nonlinear analysis, as well as some current research problems. Thus, the reader is introduced to the fascinating theory around Brouwer's fixed point theorem, to Granas' theory of topological transversality, and to some advanced techniques of critical point theory and fixed point theory. Other topics include discontinuous differential equations, new results of metric fixed point theory, robust tracker design problems for various classes of nonlinear systems, and periodic solutions in computer virus propagation models.

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### **PROBLEMS AND SOLUTIONS ON MECHANICS**

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*World Scientific* Newtonian mechanics : dynamics of a point mass (1001-1108) - Dynamics of a system of point masses (1109-1144) - Dynamics of rigid bodies (1145-1223) - Dynamics of deformable bodies (1224-1272) - Analytical mechanics : Lagrange's equations (2001-2027) - Small oscillations (2028-2067) - Hamilton's canonical equations (2068-2084) - Special relativity (3001-3054).

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### **INTRODUCTION TO THE THEORY OF STATISTICS**

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*McGraw-Hill Publishing Company* This text offers a sound and self-contained introduction to classical statistical theory. The material is suitable for students who have successfully completed a single year's course in calculus, and no prior knowledge of statistics or probability is assumed. Practical examples and problems are included.

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## A COURSE IN COMPLEX ANALYSIS AND RIEMANN SURFACES

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*American Mathematical Society* **Complex analysis is a cornerstone of mathematics, making it an essential element of any area of study in graduate mathematics. Schlag's treatment of the subject emphasizes the intuitive geometric underpinnings of elementary complex analysis that naturally lead to the theory of Riemann surfaces. The book begins with an exposition of the basic theory of holomorphic functions of one complex variable. The first two chapters constitute a fairly rapid, but comprehensive course in complex analysis. The third chapter is devoted to the study of harmonic functions on the disk and the half-plane, with an emphasis on the Dirichlet problem. Starting with the fourth chapter, the theory of Riemann surfaces is developed in some detail and with complete rigor. From the beginning, the geometric aspects are emphasized and classical topics such as elliptic functions and elliptic integrals are presented as illustrations of the abstract theory. The special role of compact Riemann surfaces is explained, and their connection with algebraic equations is established. The book concludes with three chapters devoted to three major results: the Hodge decomposition theorem, the Riemann-Roch theorem, and the uniformization theorem. These chapters present the core technical apparatus of Riemann surface theory at this level. This text is intended as a detailed, yet fast-paced intermediate introduction to those parts of the theory of one complex variable that seem most useful in other areas of mathematics, including geometric group theory, dynamics, algebraic geometry, number theory, and functional analysis. More than seventy figures serve to illustrate concepts and ideas, and the many problems at the end of each chapter give the reader ample opportunity for practice and independent study.**

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## EXAM PRACTICE WORKBOOK FOR MATHEMATICS FOR THE IB DIPLOMA: ANALYSIS AND APPROACHES SL

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*Hodder Education* **Consolidate learning and develop problem solving skills through exam practice questions; ideal for independent learning, homework or extension activities. · Strengthen skills and consolidate knowledge with a wealth of advice and questions that mirrors the syllabus line by line. · Prepare thoroughly for assessment with revision and exam tips, including a calculator skills checklist and mark scheme guidance. · Build confidence using the six mock exam papers, with accompanying mark schemes. · Ideal for independent learning, homework or extension activities, this workbook contains a wealth of exam-style practice. · Answers for the practice questions are available for free at [www.hoddereducation.com/ibextras](http://www.hoddereducation.com/ibextras)**

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## INVESTMENT UNDER UNCERTAINTY

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*Princeton University Press* **How should firms decide whether and when to invest in new capital equipment, additions to their workforce, or the development of new products? Why have traditional economic models of investment failed to explain the behavior of investment spending in the United States and other countries? In this book, Avinash Dixit and Robert Pindyck provide the first detailed exposition of a new theoretical approach to the capital investment decisions of firms, stressing the irreversibility of most investment decisions, and the ongoing uncertainty of the economic environment in which these decisions are made. In so doing, they answer important questions about investment decisions and the behavior of investment spending. This new approach to investment recognizes the option value of waiting for better (but never complete) information. It exploits an analogy with the theory of options in financial markets, which permits a much richer dynamic framework than was possible with the traditional theory of investment. The authors present the new theory in a clear and systematic way, and consolidate, synthesize, and extend the various strands of research that have come out of the theory. Their book shows the importance of the theory for understanding investment behavior of firms; develops the implications of this theory for industry dynamics and for government policy concerning investment; and shows how the theory can be applied to specific industries and to a wide variety of business problems.**

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## MATHEMATICS HL

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*Damaris Publishing* **This book provides practical support and guidance to help IB Diploma Programme students prepare for their mathematics HL exams.**

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## APPLIED MULTIVARIATE STATISTICAL ANALYSIS (CLASSIC VERSION)

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*Pearson* **This title is part of the Pearson Modern Classics series. Pearson Modern Classics are acclaimed titles at a value price. Please visit [www.pearsonhighered.com/math-classics-series](http://www.pearsonhighered.com/math-classics-series) for a complete list of titles. For courses in Multivariate Statistics, Marketing Research, Intermediate Business Statistics, Statistics in Education, and graduate-level courses in Experimental Design and Statistics. Appropriate for experimental scientists in a variety of disciplines, this market-leading text offers a readable introduction to the statistical analysis of multivariate observations. Its primary goal is to impart the knowledge necessary to make proper interpretations and select appropriate techniques for analyzing multivariate data. Ideal for a junior/senior or graduate level course that explores the statistical methods**

for describing and analyzing multivariate data, the text assumes two or more statistics courses as a prerequisite.

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## **BERNHARD RIEMANN 1826-1866**

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### **TURNING POINTS IN THE CONCEPTION OF MATHEMATICS**

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*Springer Science & Business Media* The name of Bernard Riemann is well known to mathematicians and physicists around the world. His name is indelibly stamped on the literature of mathematics and physics. This remarkable work, rich in insight and scholarship, is addressed to mathematicians, physicists, and philosophers interested in mathematics. It seeks to draw those readers closer to the underlying ideas of Riemann's work and to the development of them in their historical context. This illuminating English-language version of the original German edition will be an important contribution to the literature of the history of mathematics.

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## **MATHEMATICS FOR THE IB DIPLOMA: ANALYSIS AND APPROACHES HL**

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### **ANALYSIS AND APPROACHES HL**

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*Hachette UK* Enable students to construct, communicate and justify correct mathematical arguments with a range of activities and examples of maths in the real world. - Engage and excite students with examples and photos of maths in the real world, plus inquisitive starter activities to encourage their problem-solving skills - Build mathematical thinking with our 'Toolkit' and mathematical exploration chapter, along with our new toolkit feature of questions, investigations and activities - Develop understanding with key concepts and applications integrated throughout, along with TOK links for every topic - Prepare your students for assessment with worked examples, and extended essay support - Check understanding with review exercise midway and at the end of the coursebook Follows the new 2019 IB Guide for Mathematics: analysis and approaches Higher Level

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## **WHEELS, LIFE AND OTHER MATHEMATICAL AMUSEMENTS**

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*American Mathematical Soc.* Martin Gardner's Mathematical Games columns in Scientific American inspired and entertained several generations of mathematicians and scientists. Gardner in his crystal-clear prose illuminated corners of mathematics, especially recreational mathematics, that most people had no idea existed. His playful spirit and inquisitive nature invite the reader into an exploration of beautiful mathematical ideas along with him. These

columns were both a revelation and a gift when he wrote them; no one--before Gardner--had written about mathematics like this. They continue to be a marvel. This is the original 1983 edition and contains columns published from 1970-1972. It includes three columns on the game of Life.

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### **ALGORITHMS IN COMBINATORIAL DESIGN THEORY**

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*Elsevier* The scope of the volume includes all algorithmic and computational aspects of research on combinatorial designs. Algorithmic aspects include generation, isomorphism and analysis techniques - both heuristic methods used in practice, and the computational complexity of these operations. The scope within design theory includes all aspects of block designs, Latin squares and their variants, pairwise balanced designs and projective planes and related geometries.

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### **PHYSICS FOR THE IB DIPLOMA EXAM PREPARATION GUIDE**

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*Cambridge University Press* Physics for the IB Diploma, Sixth edition, covers in full the requirements of the IB syllabus for Physics for first examination in 2016. This Exam Preparation Guide contains up-to-date material matching the 2016 IB Diploma syllabus and offers support for students as they prepare for their IB Diploma Physics exams. The book is packed full of Model Answers, Annotated Exemplar Answers and Hints to help students hone their revision and exam technique and avoid common mistakes. These features have been specifically designed to help students apply their knowledge in exams. The book also contains lots of questions for students to use to track their progress. The book has been written in an engaging and student friendly tone making it perfect for international learners.

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### **BIOLOGY FOR THE IB DIPLOMA STUDY AND REVISION GUIDE**

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*Hachette UK* Exam Board: IB Level: IB Subject: Biology First Teaching: September 2014 First Exam: Summer 16 Stretch your students to achieve their best grade with these year round course companions; providing clear and concise explanations of all syllabus requirements and topics, and practice questions to support and strengthen learning. - Consolidate revision and support learning with a range of exam practice questions and concise and accessible revision notes - Practise exam technique with tips and trusted guidance from examiners on how to tackle questions - Focus revision with key terms and definitions listed for each topic/sub topic

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## **POTENTIAL THEORY IN GRAVITY AND MAGNETIC APPLICATIONS**

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*Cambridge University Press* This text bridges the gap between the classic texts on potential theory and modern books on applied geophysics. It opens with an introduction to potential theory, emphasising those aspects particularly important to earth scientists, such as Laplace's equation, Newtonian potential, magnetic and electrostatic fields, and conduction of heat. The theory is then applied to the interpretation of gravity and magnetic anomalies, drawing on examples from modern geophysical literature. Topics explored include regional and global fields, forward modeling, inverse methods, depth-to-source estimation, ideal bodies, analytical continuation, and spectral analysis. The book includes numerous exercises and a variety of computer subroutines written in FORTRAN. Graduate students and researchers in geophysics will find this book essential.

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## **PROBABILITY THEORY AND STOCHASTIC PROCESSES WITH APPLICATIONS (SECOND EDITION)**

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*World Scientific Publishing Company* This second edition has a unique approach that provides a broad and wide introduction into the fascinating area of probability theory. It starts on a fast track with the treatment of probability theory and stochastic processes by providing short proofs. The last chapter is unique as it features a wide range of applications in other fields like Vlasov dynamics of fluids, statistics of circular data, singular continuous random variables, Diophantine equations, percolation theory, random Schrödinger operators, spectral graph theory, integral geometry, computer vision, and processes with high risk. Many of these areas are under active investigation and this volume is highly suited for ambitious undergraduate students, graduate students and researchers.

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## **DAILY LANGUAGE REVIEW GRADE 5**

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*Evan Moor Educational Publishers* This book includes Monday to Friday lessons for each day of a 36-week school year and short daily lessons. The Monday to Thursday lessons include two sentences to edit, including corrections in punctuation, capitalization, spelling, grammar, and vocabulary and three items practicing a variety of language and reading skills. Friday practice cycles through five formats: language usage, identifying and correcting mistakes, combining sentences, choosing reference materials and figurative speech (similes, metaphors). The pages are reproducible and the book includes a skills list and answer keys.

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## REAL ANALYSIS: A COMPREHENSIVE COURSE IN ANALYSIS, PART 1

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*American Mathematical Soc.* **A Comprehensive Course in Analysis** by Poincaré Prize winner Barry Simon is a five-volume set that can serve as a graduate-level analysis textbook with a lot of additional bonus information, including hundreds of problems and numerous notes that extend the text and provide important historical background. Depth and breadth of exposition make this set a valuable reference source for almost all areas of classical analysis. Part 1 is devoted to real analysis. From one point of view, it presents the infinitesimal calculus of the twentieth century with the ultimate integral calculus (measure theory) and the ultimate differential calculus (distribution theory). From another, it shows the triumph of abstract spaces: topological spaces, Banach and Hilbert spaces, measure spaces, Riesz spaces, Polish spaces, locally convex spaces, Fréchet spaces, Schwartz space, and spaces. Finally it is the study of big techniques, including the Fourier series and transform, dual spaces, the Baire category, fixed point theorems, probability ideas, and Hausdorff dimension. Applications include the constructions of nowhere differentiable functions, Brownian motion, space-filling curves, solutions of the moment problem, Haar measure, and equilibrium measures in potential theory.

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## LINEAR STATISTICAL INFERENCE AND ITS APPLICATIONS, 2ND ED (WITH CD)

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The purpose of this book is to present up-to-date theory and techniques of statistical inference in a logically integrated and practical form. Essentially, it incorporates the important developments in the subject that have taken place in the last three decades. It is written for readers with background knowledge of mathematics and statistics at the undergraduate level. " Algebra of Vectors and Matrices." Probability Theory, Tools and Techniques." Continuous Probability Models." The Theory of Least Squares and Analysis of Variance." Criteria and Methods of Estimation." Large Sample Theory and Methods." Theory of Statistical Inference." Multivariate Analysis.

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## METHODS OF MATHEMATICAL PHYSICS

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*CUP Archive*

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## TOPOLOGICAL RINGS

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*Elsevier* This text brings the reader to the frontiers of current research in topological rings. The exercises illustrate many results and theorems while a comprehensive bibliography is also included. The book is aimed at those readers

acquainted with some very basic point-set topology and algebra, as normally presented in semester courses at the beginning graduate level or even at the advanced undergraduate level. Familiarity with Hausdorff, metric, compact and locally compact spaces and basic properties of continuous functions, also with groups, rings, fields, vector spaces and modules, and with Zorn's Lemma, is also expected.

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### **THE SEDIMENTARY RECORD OF SEA-LEVEL CHANGE**

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*Cambridge University Press* This unique textbook describes how past changes in sea-level can be detected through an analysis of the sedimentary record. In particular, it concentrates on the current sequence stratigraphy model. It explains this model from basics and shows how the model can be applied to both siliciclastic and carbonate succession