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<u>What Works in Girls' Education</u> Academic Press
A hydrogen economy, in which this one gas provides the source of all energy needs, is often touted as the long-term solution to the environmental and security problems associated with fossil fuels. However, before hydrogen can be used as fuel on a global scale we must establish cost effective means of producing, storing, and distributing the gas, develop cost efficient technologies for converting hydrogen to electricity (e.g. fuel cells), and creating the infrastructure to support all this. Sorensen is the only text available that provides up to date coverage of all these issues at a level appropriate for the technical reader. The book not only describes the "how" and "where" aspects of hydrogen fuels cells usage, but also the obstacles and benefits of its use, as well as the social implications (both economically and environmental). Written by a world-renowned researcher in energy systems, this

thoroughly illustrated and cross-referenced book is an excellent reference for researchers, professionals and students in the field of renewable energy. Updated sections on PEM fuel cells, Molten carbonate cells, Solid Oxide cells and Biofuel cells Updated material to reflect the growing commercial acceptance of stationary and portable fuel cell systems, while also recognizing the ongoing research in automotive fuel cell systems A new example of a regional system based on renewable energy sources reflects the growing international attention to uses of renewable energy as part of the energy grid Examples of life cycle analysis of environmental and social impacts *Cambridge International AS and A Level Mathematics: Statistics 2 Coursebook* Academic Press

Scientific interest in TiO2-based materials has exponentially grown in the last few decades. Titanium Dioxide (TiO2) and Its Applications introduces the main physicochemical properties of TiO2 which are the basis of its applications in various fields. While the basic principles of the TiO2 properties have been the subject of various previous publications, this book is mainly devoted to TiO2 applications. The book includes contributions written by experts from a wide range of disciplines in order to address titanium dioxide's utilization in energy, consumer, materials, devices, and catalytic

applications. The various applications identified include: photocatalysis, catalysis, optics, electronics, energy storage and production, ceramics, pigments, cosmetics, sensors, and heat transfer. Titanium Dioxide (TiO2) and Its Applications is suitable for a wide readership in the disciplines of materials science, chemistry, and engineering in both academia and industry. Includes a wide range of current and emerging applications of titanium dioxide in the fields of energy, consumer applications, materials, and devices Provides a brief overview of titanium dioxide and its properties, as well as techniques to design, deposit, and study the material Discusses the relevant properties, preparation methods, and other apposite considerations in each application-focused chapter

ICTMA 9- Applications in Science and Technology Brookings Institution Press

Since the publication of Random Matrices (Academic Press, 1967) so many new results have emerged both in theory and in applications, that this edition is almost completely revised to reflect the developments. For example, the theory of matrices with quaternion elements was developed to compute certain multiple integrals, and the inverse scattering theory was used to derive asymptotic results. The discovery of Selberg's 1944 paper on a multiple integral also gave rise to hundreds of recent publications. This book presents a coherent and detailed analytical treatment of

random matrices, leading in particular to the calculation of n-point correlations, of spacing probabilities, and of a number of statistical quantities. The results are used in describing the statistical properties of nuclear excitations, the energies of chaotic systems, the ultrasonic frequencies of structural materials, the zeros of the Riemann zeta function, and in general the characteristic energies of any sufficiently complicated system. Of special interest to physicists and mathematicians, the book is self-contained and the reader need know mathematics only at the undergraduate level. Key Features * The three Gaussian ensembles, unitary, orthogonal, and symplectic; their n-point correlations and spacing probabilities * The three circular ensembles: unitary, orthogonal, and symplectic; their equivalence to the Gaussian * Matrices with quaternion elements * Integration over alternate and mixed variables * Fredholm determinants and inverse scattering theory * A Brownian motion model of the matrices * Computation of the mean and of the variance of a number of statistical quantities * Selberg's integral and its consequences Making Mathematics Accessible to All Cambridge University Press

Making up Numbers: A History of Invention in Mathematics offers a detailed but accessible account of a wide range of mathematical ideas. Starting with elementary concepts, it leads the reader towards aspects of current mathematical research. The book explains how conceptual hurdles in the development of numbers and number systems were overcome in the course of history, from Babylon to Classical Greece, from the Middle Ages to the Renaissance, and so to the nineteenth and twentieth centuries. The narrative moves from the Pythagorean insistence on positive multiples to the gradual acceptance of negative numbers, irrationals and complex numbers as essential tools in quantitative analysis. Within this chronological framework, chapters are organised thematically, covering a variety of topics and contexts: writing and solving equations, geometric construction, coordinates and complex numbers, perceptions of 'infinity' and its permissible uses in mathematics, number systems, and evolving views of the role of axioms. Through this approach, the author demonstrates that changes in our understanding of numbers have often relied on the breaking of long-held conventions to make way for new inventions at once providing greater clarity and widening mathematical horizons. Viewed from this historical perspective, mathematical abstraction emerges as neither mysterious nor immutable, but as a contingent, developing human activity. Making up Numbers will be of great interest to undergraduate and A-level students of mathematics, as well as secondary school teachers of the subject. In virtue of its detailed treatment of mathematical ideas, it will be of value to anyone seeking to learn more about the development of the subject.

Managing Wine Quality Woodhead Publishing
Hard-headed evidence on why the returns from investing in girls are so high that no nation or family can afford not to educate their girls. Gene Sperling, author of the seminal 2004 report published by the Council on Foreign Relations, and Rebecca Winthrop, director of the Center for Universal Education, have written this definitive book on the importance of girls' education. As Malala Yousafzai expresses in her foreword, the idea that any child could be denied an education due to

poverty, custom, the law, or terrorist threats is just wrong and unimaginable. More than 1,000 studies have provided evidence that high-quality girls' education around the world leads to wide-ranging returns: Better outcomes in economic areas of growth and incomes Reduced rates of infant and maternal mortality Reduced rates of child marriage Reduced rates of the incidence of HIV/AIDS and malaria Increased agricultural productivity Increased resilience to natural disasters Women's empowerment What Works in Girls' Education is a compelling work for both concerned global citizens, and any academic, expert, nongovernmental organization (NGO) staff member, policymaker, or journalist seeking to dive into the evidence and policies on girls' education.

Theory, Methods, and Applications Academic Press
Handbook of Statistical Analysis and Data Mining Applications, Second Edition, is a comprehensive professional reference book that guides business analysts, scientists, engineers and researchers, both academic and industrial, through all stages of data analysis, model building and implementation. The handbook helps users discern technical and business problems, understand the strengths and weaknesses of modern data mining algorithms and employ the right statistical methods for practical application. This book is an ideal reference for users who want to address massive and complex datasets with novel statistical approaches and be able to objectively evaluate analyses and solutions. It has clear, intuitive explanations of the principles and tools for solving problems using modern analytic techniques and discusses their application to real problems in ways accessible and beneficial to practitioners across several areas—from science and engineering, to medicine, academia and commerce. Includes input by practitioners for practitioners Includes tutorials in numerous fields of study that provide step-by-step instruction on how to use supplied tools to build models Contains practical advice from successful real-world implementations Brings together, in a single resource, all the information a beginner needs to understand the tools and issues in data mining to build successful data mining solutions Features clear, intuitive explanations of novel analytical tools and techniques, and their practical applications

Resources in Education HarperCollins UK
This book investigates how culture is used to reflect on change in Zimbabwe, focusing predominantly on Mnangagwa's 2017 coup, but also uncovering deeper roots for how renewal and transition are conceived in the country. Since Emmerson Mnangagwa ousted Robert Mugabe in 2017, he has been keen to define his 'Second Republic' or 'New Dispensation' with a rhetoric of change and a rejection of past political and economic cultures. This multi- and inter-disciplinary volume looks to the (social) media, language/discourse, theatre, images, political speeches, and literary fiction and non-fiction to see how they have reflected on this time of unprecedented upheaval. The book argues that themes of self-renewal stretch right back to the formative years of the ZANU PF, and that despite the longevity of Mugabe's tenure, the latest transition can be seen as part of a complex and protracted layering of post-colonial social, economic and political changes. Providing an innovative investigation of how political change in Zimbabwe is reflected on in cultural texts and products, this book will be of interest to researchers across African history, literature, politics, culture, and post-colonial studies.

The Role of Curvature in Condensed Matter: Physics, Chemistry and Biology Elsevier
Cambridge AS and A Level Mathematics is a revised series to ensure full syllabus coverage. This coursebook has been revised and updated to ensure that it meets the requirements for the Statistics 2 (S2) unit of Cambridge AS and A Level Mathematics (9709). This revised edition has been redesigned and includes updated review questions to reflect changes in the style of questions asked in the course.

<u>Principles, Designs and Applications in Biomedical Engineering</u> Elsevier MATLAB for Neuroscientists serves as the only complete study manual and teaching resource for MATLAB, the globally accepted standard for scientific computing, in the neurosciences and psychology. This unique introduction can be used to learn the entire empirical and experimental process (including stimulus generation, experimental control, data collection, data analysis, modeling, and more), and the 2nd Edition continues to ensure that a wide variety of computational problems can be addressed in a single programming environment. This updated edition features additional material on the creation of visual stimuli, advanced psychophysics, analysis of LFP data, choice probabilities, synchrony, and advanced spectral analysis. Users at a variety of levels—advanced undergraduates, beginning graduate students, and researchers looking to modernize their skills—will learn to design and implement their own analytical tools, and gain the fluency required to meet the computational needs of neuroscience practitioners. The first complete volume on MATLAB focusing on neuroscience and psychology applications Problem-based approach with many examples from neuroscience and cognitive psychology using real data Illustrated in full color throughout Careful tutorial approach, by authors who are award-winning educators with strong teaching experience

Klara and the Sun Springer

With applications ranging from medical diagnostics to environmental monitoring, molecular sensors (also known as biosensors, chemical sensors, or chemosensors), along with emerging nanotechnologies offer not only valuable tools but also unlimited possibilities for engineers and scientists to explore the world. New generation of functional microsystems can be designed to provide a variety of small scale sensing, imaging and manipulation techniques to the fundamental building blocks of materials. This book provides comprehensive coverage of the current and emerging technologies of molecular sensing, explaining the principles of molecular sensor design and assessing the sensor types currently available. Having explained the basic sensor structures and sensing principles, the authors proceed to explain the role of nano/micro fabrication techniques in molecular sensors, including MEMS, BioMEMS, MicroTAS among others. The miniaturization of versatile molecular sensors opens up a new design paradigm and a range of novel biotechnologies, which is illustrated through case studies of groundbreaking applications in the life sciences and elsewhere. As well as the techniques and devices themselves, the authors also cover the critical issues of implantability, biocompatibility and the regulatory framework. The book is aimed at a broad audience of engineering professionals, life scientists and students working in the multidisciplinary area of biomedical engineering. It explains essential principles of electrical, chemical, optical and mechanical engineering as well as biomedical science, intended for readers with a variety of scientific backgrounds. In addition, it will be valuable for medical professionals and researchers. An online tutorial developed by the authors provides learning reinforcement for students and professionals alike. Reviews of state-of-the-art molecular sensors and nanotechnologies Explains principles of sensors and fundamental theories with homework problems at the end of each chapter to facilitate learning Demystifies the vertical integration from nanomaterials to devices design Covers practical applications the recent progress in state-of-the-art sensor technologies Includes case studies of important commercial products Covers the critical issues of implantability, biocompatibility and the regulatory framework

Revised and Enlarged Second Edition Elsevier

From earlier ecological studies it has become apparent that simple univariate or bivariate statistics are often inappropriate, and that multivariate statistical analyses must be applied. Despite several difficulties arising from the application of multivariate methods, community ecology has acquired a mathematical framework, with three consequences: it can develop as an exact science; it can be applied operationally as a computer-assisted science to the solution of environmental problems; and it can exchange information with other disciplines using the language of mathematics. This book comprises the invited lectures, as well as working group reports, on the NATO workshop held in Roscoff (France) to improve the applicability of this new method numerical ecology to specific ecological problems.

Handbook of Research in Science Education in Sub-Saharan Africa
Elsevier

More than ever, students need to engage with mathematical concepts, think quantitatively and analytically, and communicate using mathematics. All these skills are central to a young person's preparedness to tackle problems that arise at work and in life beyond the classroom.

Education Law, Strategic Policy and Sustainable Development in Africa Disha Publications

Volume three of Culture & Civilization continues a pattern in this annual series of dealing with major themes of the past, with a strong sense of how the everyday world of the second decade of the twenty-first century impacts cultural history and civilizations pushing up against each other. A constant theme throughout is the immediate impact of Globalism: in economics, government, manners, styles, egalitarianism in political demands, and terrorism as a response to democratic systems. Each in its own way has coalesced to bring discourse on civilization levels back into vogue. Global issues in size, scope, and scenario are herein placed on exhibition once again. Among the noteworthy contributions are substantial articles by Jason Powell, Global Aging; Tony Leon, Liberal Democracy in Africa; Yoaz Hendel, Terrorism and Piracy; Norman Manea and Paul Hollander, "Twenty Years After the Fall of the Berlin Wall"; Aleksander Kwasniewski, "World Views of the European Union"; Gregg Rickman, "The Nazi Religion and the Holocaust"; and Walter Laqueur, "Europe's Road to the Mosque". This volume features special essays on Jean Francois Revel's Uncommon Insight; John Maynard Keynes Revisited; Stefan Zweig: Master Builder of the Spirit; and Inside Shakespeare's Hamlet. As with the previous volumes, the writings are brilliantly realized in form with serious content to match. Threading a needle between abstracted empiricism that dominates present science policy and speculative metaphysics that offers little else than a great vision of the world, this volume of Culture & Civilization on Globalism charts a space for which there is a felt need by large publics, responded to by serious social science specialists capable of addressing such interests in historically meaningful contexts.

Symmetry 2 John Wiley & Sons

From her place in the store, Klara, an Artificial Friend with outstanding observational qualities, watches carefully the behaviour of those who come in to browse, and of those who pass in the street outside. She remains hopeful a customer will soon choose her, but when the possibility emerges that her circumstances may change for ever, Klara is warned not to invest too much in the promises of humans. In 'Klara and the Sun', Kazuo Ishiguro looks at our rapidly-changing modern world through the eyes of an unforgettable narrator to explore a fundamental question: what does it mean to love?

Modelling and Mathematics Education OECD Publishing

This book outlines the findings and suggestions of the Law and Society Association's International Research Collaborations, which focused on the African Union's Agenda 2063. This outlined the ideal Africa aspired to by the year 2063: 'the Africa we want'. The authors examine socio-economic rights issues and their impact on developing a strong educational agenda that can drive Africa to realize Agenda 2063. As Africa's development has remained slow in the face of many challenges, the need to embrace good governance, rule of law and

human rights obligations are major tools to realize the continent's potential. The project focuses in particular on the central place of education law and policy in achieving the goals of Agenda 2063.

Hydrogen and Fuel Cells William Andrew

Rich selection of 100 practice problems — with hints and solutions — for students preparing for the William Lowell Putnam and other undergraduate-level mathematical competitions. Features real numbers, differential equations, integrals, polynomials, sets, other topics. Hours of stimulating challenge for math buffs at varying degrees of proficiency. References.

Titanium Dioxide (TiO_2) and Its Applications Open Book Publishers

This second edition is extensively revised throughout with expanded discussion of modeling fundamentals and coverage of advances in model calibration and uncertainty analysis that are revolutionizing the science of groundwater modeling. The text is intended for undergraduate and graduate level courses in applied groundwater modeling and as a comprehensive reference for environmental consultants and scientists/engineers in industry and governmental agencies. Explains how to formulate a conceptual model of a groundwater system and translate it into a numerical model Demonstrates how modeling concepts, including boundary conditions, are implemented in two groundwater flow codes-- MODFLOW (for finite differences) and FEFLOW (for finite elements) Discusses particle tracking methods and codes for flowpath analysis and advective transport of contaminants Summarizes parameter estimation and uncertainty analysis approaches using the code PEST to illustrate how concepts are implemented Discusses modeling ethics and preparation of the modeling report Includes Boxes that amplify and supplement topics covered in the text Each chapter presents lists of common modeling errors and problem sets that illustrate concepts

Unifying Human Understanding Elsevier

The Zimbabwe Science NewsA Journal of the Zimbabwe Scientific AssociationGCE O Level Examination Past Papers with Answer Guides: Maths India EditionFoundation Books

Applied Dimensional Analysis and Modeling Foundation Books

Understanding Credit Derivatives and Related Instruments, Second Edition is an intuitive, rigorous overview that links the practices of valuing and trading credit derivatives with academic theory. Rather than presenting highly technical explorations, the book offers summaries of major subjects and the principal perspectives associated with them. The book's centerpiece is pricing and valuation issues, especially valuation tools and their uses in credit models. Five new chapters cover practices that have become commonplace as a result of the 2008 financial crisis, including standardized premiums and upfront payments. Analyses of regulatory responses to the crisis for the credit derivatives market (Basel III, Dodd-Frank, etc.) include all the necessary statistical and mathematical background for readers to easily follow the pricing topics. Every reader familiar with mid-level mathematics who wants to understand the functioning of the derivatives markets (in both practical and academic contexts) can fully satisfy his or her interests with the comprehensive assessments in this book. Explores the role that credit derivatives played during the economic crisis, both as hedging instruments and as vehicles that potentially magnified losses for some investors Comprehensive overview of single-name and multi-name credit derivatives in terms of market specifications, pricing techniques, and regulatory treatment Updated edition uses current market statistics (market size, market participants, and uses of credit derivatives), covers the application of CDS technology to other asset classes (CMBX, ABX, etc.), and expands the treatment of individual instruments to cover index products, and more

Handbook of Statistical Analysis and Data Mining Applications Courier Corporation

Studies in Logic and the Foundations of Mathematics, Volume 123: Constructivism in Mathematics: An Introduction, Vol. II focuses on various studies in mathematics and logic, including metric spaces, polynomial rings, and Heyting algebras. The publication first takes a look at the topology of metric spaces, algebra, and finite-type arithmetic and theories of operators. Discussions focus on intuitionistic finite-type arithmetic, theories of operators and classes, rings and modules, linear algebra, polynomial rings, fields and local rings, complete separable metric spaces, and located sets. The text then examines proof theory of intuitionistic logic, theory of types and constructive set theory, and choice sequences. The book elaborates on semantical completeness, sheaves, sites, and higher-order logic, and applications of sheaf models. Topics include a derived rule of local continuity, axiom of countable choice, forcing over sites, sheaf models for higher-order logic, and complete Heyting algebras. The publication is a valuable reference for mathematicians and researchers interested in mathematics and logic.