Profiles In Mathematics Rene Descartes

New Scientist magazine was launched in 1956 "for all those men and women who are interested in scientific discovery, and in its industrial, commercial and social consequences". The brand's mission is no different today - for its consumers, New Scientist reports, explores and interprets the results of human endeavour set in the context of society and culture. This book grew out of a graduate student paper [261] in which I set down some criticisms of J. R. Lucas' attempt to refute mechanism by means of G6del's theorem. I had made several such abortive attempts myself and had become familiar with their pitfalls, and especially with the double edged nature of incompleteness arguments. My original idea was to model the refutation of mechanism on the almost universally accepted G6delian refutation of Hilbert's formalism, but I kept getting stuck on questions of mathematical philosophy which I found myself having to beg. A thorough study of the foundational works of Hilbert and Bernays finally convinced me that I had all too naively and uncritically bought this refutation of formalism. I did indeed discover points of surprisingly close contact between formalism and mechanism, but also that it was possible to under mine certain strong arguments against these positions precisely by invok ing G6del's and related work. I also began to realize that the Church Turing thesis itself is the principal bastion protecting mechanism, and that G6del's work was perhaps the best thing that ever happened to both mechanism and formalism. I pushed these lines of argument in my dis sertation with the patient help of my readers, Raymond Nelson and Howard Stein. I would especially like to thank the latter for many valuable criticisms of my dissertation as well as some helpful suggestions for reor ganizing it in the direction of the present book.

A collection of the short biographical profiles that have appeared monthly in the journal Clinical Cardiology from 1986 up to the present. The persons who are the subjects of these profiles are individuals who have contributed in a meaningful or unique way to knowledge in the field of cardiology.

Examines the impact of mathematics on our social life and on our perceptions of reality, knowledge, and time, ranging from ancient Egyptian land surveys to Descartes' work

This book reconstructs key aspects of the early career of Descartes from 1618 to 1633; that is, up through the point of his composing his first system of natural philosophy, Le Monde, in 1629-33. It focuses upon the overlapping and intertwined development of Descartes' projects in physico-mathematics, analytical mathematics, universal method, and, finally, systematic corpuscular-mechanical natural philosophy. The concern is not simply with the conceptual and technical aspects of these projects; but, with Descartes' agendas within them and his construction and presentation of his intellectual identity in relation to them. Descartes' technical projects, agendas and senses of identity shifted over time, entangled and displayed great successes and deep failures, as he morphed from a mathematically competent, Jesuit trained graduate in neo-Scholastic Aristotelianism to aspiring prophet of a systematised corpuscular-mechanism, passing through stages of being a committed physico-mathematicus, advocate of a putative 'universal mathematics', and projector of a grand methodological dream. In all three dimensions—projects, agendas and identity concerns—the young Descartes struggled and contended, with himself and with real or virtual peers and competitors, hence the title 'Descartes-Agonistes'.

A series of biographies designed to lift mathematics off the page and out of the calculator, featuring individuals whose contributions were critical to the development of mathematics.

Looks at the feats of the early twentieth century's greatest provocateurs, including Rimbaud, Freud, Joyce, Stein, Planck, Einstein, and Kandinsky

Beginning with 1953, entries for Motion pictures and filmstrips, Music and phonorecords form separate parts of the Library of Congress catalogue. Entries for Maps and atlases were issued separately 1953-1955.

There's a well-known story about an older fish who swims by two younger fish and asks, "How's the water?" The younger fish are puzzled. "What's water?" they ask. Many of us today might ask a similar question: What's technology? Technology defines the world we live in, yet we're so immersed in it, so encompassed by it, that we mostly take it for granted. Seldom, if ever, do we stop to ask what technology is. Failing to ask that question, we fail to perceive all the ways it might be shaping us. Usually when we hear the word "technology," we automatically think of digital de- vices and their myriad applications. As revolutionary as smartphones, online shop- ping, and social networks may seem, however, they t into long-standing, deeply entrenched patterns of technological thought as well as practice. Generations of skeptics have questioned how well served we are by those patterns of thought and practice, even as generations of enthusiasts have promised that the latest innovations will deliver us, soon, to Paradise. We're not there yet, but the cyber utopians of Silicon Valley keep telling us it's right around the corner. What is technology, and how is it shaping us? In search of answers to those crucial questions, Not So Fast draws on the insights of dozens of scholars and artists who have thought deeply about the meanings of machines. The book explores such dynamics as technological drift, technological momentum, technological disequilibrium, and technological autonomy to help us understand the interconnected, inter- woven, and interdependent phenomena of our technological world. In the course of that exploration, Doug Hill poses penetrating questions of his own, among them: Do we have as much control over our machines as we think? And who can we rely on to guide the technological forces that will determine the future of the planet?

This unique collection contains extensive and in-depth interviews with mathematicians who have shaped the field of mathematics in the twentieth century. Collected by two mathematicians respected in the community for their skill in communicating mathematical topics to a broader audience, the book is also rich with photographs and includes an introdu

This volume contains essays that examine infinity in early modern philosophy. The essays not only consider the ways that key figures viewed the concept. They also detail how these different beliefs about infinity influenced major philosophical systems throughout the era. These domains include mathematics, metaphysics, epistemology, ethics, science, and theology. Coverage begins with an introduction that outlines the overall importance of infinity to early modern philosophy. It then moves from a general background of infinity (before early modern thought) up through Kant. Readers will learn about the place of infinity in the writings of key early modern thinkers. The contributors profile the work of Descartes, Spinoza, Leibniz, and Kant. Debates over infinity significantly influenced philosophical discussion regarding the human condition and the extent and limits of human knowledge. Questions about the infinity of space, for instance, helped lead to the introduction of a heliocentric solar system as well as the discovery of calculus. This volume offers readers an insightful look into all this and more. It provides a broad perspective that will help advance the present state of knowledge on this important but often overlooked topic.

Profiles in Mathematics: Rene DescartesMorgan Reynolds Pub

From the blackboard to the graphing calculator, the tools developed to teach mathematics in America have a rich history shaped by educational reform, technological innovation, and spirited entrepreneurship. In Tools of American Mathematics Teaching, 1800–2000, Peggy Aldrich Kidwell, Amy Ackerberg-Hastings, and David Lindsay Roberts present the first systematic historical study of the objects used in the American mathematics classroom. They discuss broad tools of presentation and pedagogy (not only blackboards and textbooks, but early twentieth-century standardized tests, teaching machines, and the overhead projector), tools for calculation, and tools for representation and measurement. Engaging and accessible, this volume tells the stories of how specific objects such as protractors, geometric models, slide rules, electronic calculators, and computers came to be used in classrooms, and how some disappeared.

"Explore the past to appreciate its impact on the present . . . If we reflect objectively on past events we come to understand that our "well-ordered" world, its certainties, is always a passing experience. The conflicts of our time—their implication to our way of life . . . Building Blocks of Western Civilization sums up aspects of our past which are relevant to the present."

Mathematics education research has blossomed into many different areas, which we can see in the programmes of the ICME conferences, as well as in the various survey articles in the Handbooks. However, all of these lines of research are trying to grapple with the complexity of the same process of learning mathematics. Although our knowledge of the process is through fragmentation of research more extensive and deeper there is a need to overcome this fragmentation and to see learning as one process with different aspects. To overcome this fragmentation, this book identifies six themes: (1) mathematics, culture and society, (2) the structure of mathematics and its influence on the learning process, (3) mathematics learning as a cognitive process, (4) mathematics learning as a social process, (5) affective conditions of the mathematics learning process, (6) new technologies and mathematics learning. This book is addressed to all researchers in mathematic education. It gives an orientation and overview on what is going on and what are the main results and questions what are important books or papers if further information is needed.

This volume represents an important contribution to Peirce's work in mathematics and formal logic. An internationally recognized group of scholars explores and extends understandings of Peirce's most advanced work. The stimulating depth and originality of Peirce's thought and the continuing relevance of his ideas are brought out by this major book.

Explores the plausibility of mathematical answers to puzzles in the physical world, in an accessible exploration of the lives and thoughts of such figures as Archimedes, Galileo, and Newton. By the author of The Golden Ratio. 50,000 first printing.

A study of French military engineers at a crucial point in the evolution of modern engineering. The origins of the modern science of engineering can be traced to France's Royal Corps of Engineering in the eighteenth century. In Conserving the Enlightenment, Janis Langins gives us a history of this prototypical technical bureaucracy, using as his point of entry a pivotal dispute on the respective merits of two methods of engineering military fortifications. The story he tells of the tribulations of military engineers at the end of the Old Regime sheds light not only on the evolution of modern engineering but also on the difficulty of innovation in a technical bureaucracy. From the days of Louis XIV and his great military engineer Vauban, engineers in France had a reputation for competence and intellectual superiority. (This respect for engineers survived the Revolution; two engineers sat on the new Republic's ruling Committee of Public Safety with Robespierre.) Langins argues that French engineers saw themselves as men of the Enlightenment, with a steadfast faith in science and its positive effects on society; they believed that their profession could improve and civilize even warfare. When Marc-Rene, marquis de Montalembert, a cavalry officer and an amateur engineer, challenged the prevailing wisdom with a new method of fortification, the subsequent factional struggle became a crucible of self-definition for the profession. In the end, Langins shows, Vauban's science won out over Montalembert's inspiration, reinforcing and predicting the essentially conservative nature of French engineering.

Mathematics has maintained a surprising presence in popular media for over a century. In recent years, the movies Good Will Hunting, A Beautiful Mind, and Stand and Deliver, the stage plays Breaking the Code and Proof, the novella Flatland and the hugely successful television crime series NUMB3RS all weave mathematics prominently into their storylines. Less obvious but pivotal references to the subject appear in the blockbuster TV show Lost, the cult movie The Princess Bride, and even Tolstoy's War and Peace. In this collection of new essays, contributors consider the role of math in everything from films, baseball, crossword puzzles, fantasy role-playing games, and television shows to science fiction tales, award-winning plays and classic works of literature. Revealing the broad range of intersections between mathematics and mainstream culture, this collection demonstrates that even "mass entertainment" can have a hidden depth.

This stress-free layperson's introduction to the intriguing world of numbers is designed to acquaint the general reader with the elegance and wonder of mathematics. Unlike the typical boot-camp experience of a high school or college calculus course, Jefferson Hane Weaver's approach is more like a relaxing and educational walking tour. Along the way, tour-guide Weaver points out, explains, and invites readers to sample some of the most interesting topics. Even the most math-phobic among us will be lulled into appreciation by Weaver's creative and disarming discussions of this supposedly formidable intellectual discipline. He covers all the basics: irrational and imaginary numbers, algebra, geometry, trigonometry, differential and integral calculus, the concepts of zero and infinity, vectors, set theory, chance and probability, and much more. In conclusion, he provides five fascinating historical profiles, reviewing the life and work of Copernicus, Descartes, Kepler, Galileo, and Newton. More than anyone else, these five geniuses were responsible for creating the mathematical foundations of the physical sciences, which continue to make possible extraordinary discoveries and technological achievements. This enjoyable volume gives readers a working knowledge of math's most important concepts, an appreciation of its elegant logical structure, and an understanding of its historical significance in creating our contemporary world.

The best in literature and language arts, mathmatics and computer science.

An alternative history of software that places the liberal arts at the very center of software's evolution. In The Software Arts, Warren Sack offers an alternative history of computing that places the arts at the very center of software's evolution. Tracing the origins of software to eighteenth-century French encyclopedists' step-by-step descriptions of how things were made in the workshops of artists and artisans, Sack shows that programming languages are the offspring of an effort to describe the mechanical arts in the language of the liberal arts. Sack offers a reading of the texts of computing—code, algorithms, and technical papers—that emphasizes continuity between prose and programs. He translates concepts and categories from the liberal and mechanical arts—including logic, rhetoric, grammar, learning, algorithm, language, and simulation—into terms of computer science and then considers their further translation into popular culture, where they circulate as forms of digital life. He considers, among

other topics, the "arithmetization" of knowledge that presaged digitization; today's multitude of logics; the history of demonstration, from deduction to newer forms of persuasion; and the post-Chomsky absence of meaning in grammar. With The Software Arts, Sack invites artists and humanists to see how their ideas are at the root of software and invites computer scientists to envision themselves as artists and humanists.

Ian Stewart, author of the bestselling Professor Stewart's Cabinet of Mathematical Curiosities, presents a new and magical mix of games, puzzles, paradoxes, brainteasers, and riddles. He mingles these with forays into ancient and modern mathematical thought, appallingly hilarious mathematical jokes, and enquiries into the great mathematical challenges of the present and past. Amongst a host of arcane and astonishing facts about every kind of number from irrational or imaginary to complex or cuneiform, we find out: how to organise chaos; how matter balances anti-matter; how to turn a sphere inside out (without creasing it...); why you can't comb a hairy ball; how to calculate pi by observing the stars. And we get some tantalising glimpses of the maths of life and the universe.Mind-stretching, enlightening and endlessly amusing, Professor Stewart's new entertainment will stimulate, delight, and enthral.

Offering fresh alternatives to common instructional practices that fail to get results, this accessible, highly practical guide highlights ways to motivate middle school students while enhancing content-area learning. Each chapter features an enlightening case study of a teacher whose current strategies are not supported by research; describes effective instructional alternatives, illustrated with concrete examples; and lists online resources and lesson examples. Emphasis is given to supporting critical engagement with texts and drawing on technology and new literacies. The book covers specific content areas—including science, social studies, math, and literature—as well as ways to teach oral literacy and writing across the curriculum.

Profiles more than 150 mathematicians from around the world who made important contributions to their field, including Rene Descartes, Emily Noether and Bernhard Riemann.

Armchair Physics is an interactive guide that's part of a series of fascinating subjects - physics, algebra, and chemistry. They contain clear and concise explanations of different concepts, as well as profiles of key thinkers and their discoveries. A unique feature of this series are the simple, step-by-step exercises. Some of these have everyday applications, others are theoretical puzzles, and all are designed to challenge you and test your newly acquired knowledge. Written in a highly readable style suitable for any audience. The aim of each book is to convey the basic principles of a subject - and the stories behind them - to anyone who is interested in learning about the universe around them, with an emphasis on how these seemingly abstract principles relate to everyday experiences. Armchair Physics covers the history and development of physics and is an interesting refresher book on the subject. It's great as a study guide for the student or an introduction for the everyday savant. Readable, understandable, it is a brilliant tool to better understand the broad ideas in physics.

This text teaches maths in a step-by-step fashion – ideal for students on first-year engineering and pre-degree courses. - Hundreds of examples and exercises, the majority set in an applied engineering context so that you immediately see the purpose of what you are learning - Introductory chapter revises indices, fractions, decimals, percentages and ratios - Fully worked solutions to every problem on the companion website at www.palgrave.com/engineering/singh plus searchable glossary, e-index, extra exercises, extra content and more!

It is commonplace that in our time sc:iem:e and technology cannot be mastered without the tools of mathematics; but the same applies to an ever growing extent to many domains of everyday life, not least owing to the spread of cybernetic methods and arguments. As a consequence, there is a wide demand for a survey of the results of mathematics. for an unconventional approach that would also make it possible to fill gaps in one's knowledge. We do not think that a mere juxtaposition of theorems or a collection of formulae would be suitable for this purpose, because this would over· emphasize the symbolic language of signs and letters rather than the mathematical idea, the only thing that really matters. Our task was to describe mathematical interrelations as briefly and precisely as possible. In view of the overwhelming amount of material it goes without saying that we did not just compile details from the numerous text-books for individual branches: what we were aiming at is to smooth out the access to the specialist literature for as many readers as possible. Since well over 700000 copies of the German edition of this book have been sold, we hope to have achieved our difficult goal. Colours are used extensively to help the reader. Important definitions and groups of formulae are on a yellow background, examples on blue, and theorems on red.

Blending historical grounding and philosophical insights regarding sport and physical activity, History and Philosophy of Sport and Physical Activity covers the historical and philosophical dimensions of the study of human movement. This cross-disciplinary text shows how theory in the humanities can affect professional practice. The author team, R. Scott Kretchmar, Mark Dyreson, Matthew P. Llewellyn, and John Gleaves, offers philosophical and ethical analyses alongside explorations of changes in culture. The text follows a chronology of human movement from our origins as hunter-gatherers to the present. The authors blend their specific areas of expertise to present a thorough integration of philosophy and history, capitalizing on the strengths of both disciplines. History and Philosophy of Sport and Physical Activity examines sport and physical activity as a social force. Each chapter provides a historical scaffolding that leads into philosophical discussions about the issues raised. The content is compelling, effective, and accessible for readers. Student exercise sidebars allow students to explore questions as they go, especially in relating philosophical inquiry to historical events. Historical profile sidebars throughout the chapters allow students to gain greater insight into historical figures and events. Ancillaries include an instructor guide, a presentation package, and a test package to help instructors make the most of the historical, philosophical, anthropological, and sociological issues presented in the book. History and Philosophy of Sport and Physical Activity is designed to reduce any gap that might exist between good ideas and sound professional behavior. Historical lessons and philosophical analyses are seamlessly integrated. Readers will understand the intersection of history, culture, ideals, ethics, and professional practice from sport's leading philosophers and historians.

Sam Gillespie's The Mathematics of Novelty presents a new account of Alain Badiou and Gilles Deleuze, identifying conceptual impasses in their philosophical projects and proposing a way through by recourse to the psychoanalysis of Jacques Lacan.

Each chapter of this portrait of the evolution of mathematics examines the work of an individual — Archimedes, Descartes,

Fermat, Pascal, Newton, Einstein, and others — to explore the mathematics of his era. Rather than a series of biographical profiles, readers encounter an accessible chronology of pioneering developments in mathematics. 1989 edition.

The two volume International Handbook of Earthquake and Engineering Seismology represents the International Association of Seismology and Physics of the Earth's Interior's (IASPEI) ambition to provide a comprehensive overview of our present knowledge of earthquakes and seismology. This state-of-the-art work is the only reference to cover all aspects of seismology--a "resource library" for civil and structural engineers, geologists, geophysicists, and seismologists in academia and industry around the globe. Part B, by more than 100 leading researchers from major institutions of science around the globe, features 34 chapters detailing strong-motion seismology, earthquake engineering, quake prediction and hazards mitigation, as well as detailed reports from more than 40 nations. Also available is The International Handbook of Earthquake and Engineering Seismology, Part A. Authoritative articles by more than 100 leading scientists Extensive glossary of terminology plus 2000+ biographical sketches of notable seismologists Overloaded with the mass of information on the Internet? Frustrated by how difficult it is to find what you really want? Now you don't need to spend hours browsing around the Internet or grappling with the huge number of "hits" from an Internet search engine: the Directory of Web Sites will take you straight to the best educational sites on the Internet. From archaeology to zoology, from dance to technology, the Directory provides information more than 5,500 carefully selected Web sites that represent the best of what the Internet has to offer. The sites are grouped by subject; each one features a full description; and the text is complemented throughout by screenshots and fact boxes. As well, sites have been selected purely on educational merit: all sites with overtly commercial content and influence from Internet providers have been excluded.

An in depth study of famous American men and women who exhibited tremendous character in their respective eras. Meet Scripture-guided reformers like David Brainard and Sojourner Truth. Don Hawkinson has crafted an amazing book that records the true character and nature of early Americans, from the political, religious, and social justice arenas, includes well-known figures like George Washington, to more "obscure" great Americans like John Witherspoon and Benjamin Rush. Each profile runs 6–12 pages and provides readers/students with concise information for reports and presentations. Hawkinson has come to realize how Christians in American can impact the world for Jesus Christ. Character for Life, An American Heritage is the stories of people who were abandoned to the mission of Jesus Christ. Their love for God and their country should motivate us to not only treasure our "godly heritage" but inspire us to discover our role in the "Great Commission."