

Letters To A Young Mathematician Ian Stewart

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The Young Mathematician's Guide

The aim of this volume is to explain the differences between research-level mathematics and the maths taught at school. Most differences are philosophical and the first few chapters are about general aspects of mathematical thought.

Dr. Riemann's Zeros

Mathematician Ian Stewart tells readers what he wishes he had known when he was a student. He takes up subjects ranging from the philosophical to the practical-what mathematics is and why it's worth doing, the relationship between logic and proof, the role of beauty in mathematical thinking, the future of mathematics, how to deal with the peculiarities of the mathematical community, and many others.

Burn Math Class

Physics.

The Joy of x

In *A Mathematician Plays the Stock Market* best-selling author John Allen Paulos demonstrates what the tools of mathematics can tell us about the vagaries of the stock market. Employing his trademark stories, vignettes, paradoxes, and puzzles (and even a film treatment), Paulos addresses every thinking reader's curiosity about the market: Is it efficient? Is it rational? Is there anything to technical analysis, fundamental analysis, and other supposedly time-tested methods of picking stocks? How can one quantify risk? What are the most common scams? What light do fractals, network theory, and common psychological foibles shed on investor behavior? Are there any approaches to investing that truly outperform the major indexes? Can a deeper knowledge of mathematics help beat the odds? All of these questions are explored with the engaging erudition that made Paulos's *A*

Mathematician Reads the Newspaper and Innumeracy favorites with both armchair mathematicians and readers who want to think like them. Paulos also shares the cautionary tale of his own long and disastrous love affair with WorldCom. In the tradition of Burton Malkiel's *A Random Walk Down Wall Street* and Jeremy Siegel's *Stocks for the Long Run*, this wry and illuminating book is for anyone, investor or not, who follows the markets-or knows someone who does.

Mathematics Tomorrow

Forget everything you've been taught about math. In *Burn Math Class*, Jason Wilkes takes the traditional approach to mathematics education—with its unwelcoming textbooks, unexplained rules, and authoritarian assertions—and sets it on fire. Focusing on how mathematics is created rather than on mathematical facts, Wilkes teaches the subject in a way that requires no memorization and no prior knowledge beyond addition and multiplication. From these simple foundations, *Burn Math Class* shows how mathematics can be (re)invented from scratch without preexisting textbooks and courses. We can discover math on our own through experimentation and failure, without appealing to any outside authority. When math is created free from arcane notations and pretentious jargon that hide the simplicity of mathematical concepts, it can be understood organically—and it becomes fun! Following this unconventional approach, *Burn Math Class* leads the reader from the basics of elementary arithmetic to various “advanced” topics, such as time-dilation in special relativity, Taylor series, and calculus in infinite-dimensional spaces. Along the way, Wilkes argues that orthodox mathematics education has been teaching the subject backward: calculus belongs before many of its so-called prerequisites, and those prerequisites cannot be fully understood without calculus. Like the smartest, craziest teacher you've ever had, Wilkes guides you on an adventure in mathematical creation that will radically change the way you think about math. Revealing the beauty and simplicity of this timeless subject, *Burn Math Class* turns everything that seems difficult about mathematics upside down and sideways until you understand just how easy math can be.

The Boy Who Loved Math

John von Neuman was perhaps the most influential mathematician of the twentieth century, especially if his broad influence outside mathematics is included. Not only did he contribute to almost all branches of mathematics and created new fields, but he also changed post-World War II history with his work on the design of computers and with being a sought-after technical advisor to many figures in the U.S. military-political establishment in the 1940s and 1950s. The present volume is the first substantial collection of (previously mainly unpublished) letters written by von Neumann to colleagues, friends, government officials, and others. The letters give us a glimpse of the thinking of John von Neumann about mathematics, physics, computer science, science management, education, consulting, politics, and war. Readers of quite diverse backgrounds will find much of interest in this fascinating first-hand look at one of the towering figures of twentieth century science.

Symmetry and the Monster

Inspiration and guidance for aspiring mathematicians

How to Think Like a Mathematician

Vladimir Arnold (1937-2010) was one of the great mathematical minds of the late 20th century. He did significant work in many areas of the field. On another level, he was keeping with a strong tradition in Russian mathematics to write for and to directly teach younger students interested in mathematics. This book contains some examples of Arnold's contributions to the genre. "Continued Fractions" takes a common enrichment topic in high school math and pulls it in directions that only a master of mathematics could envision. "Euler Groups" treats a similar enrichment topic, but it is rarely treated with the depth and imagination lavished on it in Arnold's text. He sets it in a mathematical context, bringing to bear numerous tools of the trade and expanding the topic way beyond its usual treatment. In "Complex Numbers" the context is physics, yet Arnold artfully extracts the mathematical aspects of the discussion in a way that students can understand long before they master the field of quantum mechanics. "Problems for Children 5 to 15 Years Old" must be read as a collection of the author's favorite intellectual morsels. Many are not original, but all are worth thinking about, and each requires the solver to think out of his or her box. Dmitry Fuchs, a long-term friend and collaborator of Arnold, provided solutions to some of the problems. Readers are of course invited to select their own favorites and construct their own favorite solutions. In reading these essays, one has the sensation of walking along a path that is found to ascend a mountain peak and then being shown a vista whose existence one could never suspect from the ground. Arnold's style of exposition is unforgiving. The reader--even a professional mathematician--will find paragraphs that require hours of thought to unscramble, and he or she must have patience with the ellipses of thought and the leaps of reason. These are all part of Arnold's intent. In the interest of fostering a greater awareness and appreciation of mathematics and its connections to other disciplines and everyday life, MSRI and the AMS are publishing books in the Mathematical Circles Library series as a service to young people, their parents and teachers, and the mathematics profession.

Five Golden Rules

States that the mental construct of mathematics can provide humankind with a key tool to understanding the world, and discusses the implications of basic math concepts

Letters to a Young Philosopher

Most people think of mathematicians as solitary, working away in isolation. And, it's true, many of them do. But Paul Erdos never followed the usual path. At the age of four, he could ask you when you were born and then calculate the number of seconds you had been alive in his head. But he didn't learn to butter his own bread until he turned twenty. Instead, he traveled around the world, from one

mathematician to the next, collaborating on an astonishing number of publications. With a simple, lyrical text and richly layered illustrations, this is a beautiful introduction to the world of math and a fascinating look at the unique character traits that made "Uncle Paul" a great man. *The Boy Who Loved Math* by Deborah Heiligman is a Kirkus Reviews Best Book of 2013 and a New York Times Book Review Notable Children's Book of 2013.

Math Hysteria : Fun and games with mathematics

A celebrated mathematician traces the history of math through the lives and work of twenty-five pioneering mathematicians. In *Significant Figures*, acclaimed mathematician Ian Stewart introduces the visionaries of mathematics throughout history. Delving into the lives of twenty-five great mathematicians, Stewart examines the roles they played in creating, inventing, and discovering the mathematics we use today. Through these short biographies, we get acquainted with the history of mathematics from Archimedes to Benoit Mandelbrot, and learn about those too often left out of the cannon, such as Muhammad ibn Musa al-Khwarizmi (c. 780-850), the creator of algebra, and Augusta Ada King (1815-1852), Countess of Lovelace, the world's first computer programmer. Tracing the evolution of mathematics over the course of two millennia, *Significant Figures* will educate and delight aspiring mathematicians and experts alike.

Mathematics: A Very Short Introduction

Until the middle of this century, it was completely unclear whether life had any kind of inorganic basis. The discovery of the first secret of life, the molecular structure of DNA, solved that particular riddle.

How Not to be Wrong

In 1859 Bernhard Riemann, a shy German mathematician, gave an answer to a problem that had long puzzled mathematicians. Although he couldn't provide a proof, Riemann declared that his solution was 'very probably' true. For the next one hundred and fifty years, the world's mathematicians have longed to confirm the Riemann hypothesis. So great is the interest in its solution that in 2001, an American foundation offered a million-dollar prize to the first person to demonstrate that the hypothesis is correct. In this book, Karl Sabbagh makes accessible even the airiest peaks of maths and paints vivid portraits of the people racing to solve the problem. Dr. Riemann's Zeros is a gripping exploration of the mystery at the heart of our counting system.

Life's Other Secret

"Delightful . . . easily digestible chapters include plenty of helpful examples and illustrations. You'll never forget the Pythagorean theorem again!"—Scientific American Many people take math in high school and promptly forget much of it. But math plays a part in all of our lives all of the time, whether we know it or not. In *The Joy of x*, Steven Strogatz expands on his hit New York Times series to explain the big ideas of math gently and clearly, with wit, insight, and brilliant

illustrations. Whether he is illuminating how often you should flip your mattress to get the maximum lifespan from it, explaining just how Google searches the internet, or determining how many people you should date before settling down, Strogatz shows how math connects to every aspect of life. Discussing pop culture, medicine, law, philosophy, art, and business, Strogatz is the math teacher you wish you'd had. Whether you aced integral calculus or aren't sure what an integer is, you'll find profound wisdom and persistent delight in *The Joy of x*.

Letters to a Young Contrarian

Letters to a Young Mathematician

Letters to a Young Conservative

The letters that Ramanujan wrote to G. H. Hardy on January 16 and February 27, 1913, are two of the most famous letters in the history of mathematics. These and other letters introduced Ramanujan and his remarkable theorems to the world and stimulated much research, especially in the 1920s and 1930s. This book brings together many letters to, from, and about Ramanujan. The letters came from the National Archives in Delhi, the Archives in the State of Tamil Nadu, and a variety of other sources. Helping to orient the reader is the extensive commentary, both mathematical and cultural, by Berndt and Rankin; in particular, they discuss in detail the history, up to the present day, of each mathematical result in the letters. Containing many letters that have never been published before, this book will appeal to those interested in Ramanujan's mathematics as well as those wanting to learn more about the personal side of his life. *Ramanujan: Letters and Commentary* was selected for the CHOICE list of Outstanding Academic Books for 1996.

The Survival of a Mathematician

"One of the best critiques of current mathematics education I have ever seen."—Keith Devlin, math columnist on NPR's Morning Edition A brilliant research mathematician who has devoted his career to teaching kids reveals math to be creative and beautiful and rejects standard anxiety-producing teaching methods. Witty and accessible, Paul Lockhart's controversial approach will provoke spirited debate among educators and parents alike and it will alter the way we think about math forever. Paul Lockhart, has taught mathematics at Brown University and UC Santa Cruz. Since 2000, he has dedicated himself to K-12 level students at St. Ann's School in Brooklyn, New York.

Nature's Numbers

When you are a young mathematician, graduate school marks the first step toward a career in mathematics. During this period, you will make important decisions which will affect the rest of your career. Here now is a detailed guide to help you navigate graduate school and the years that follow. In his inimitable and forthright

style, Steven Krantz addresses the major issues of graduate school, including choosing a program, passing the qualifying exams, finding an advisor, writing a thesis, and getting your first job. As with his earlier guide, *How to Teach Mathematics*, he avoids generalities, giving clear advice on how to handle real situations. The book also contains a description of the basic elements of a mathematical education, as well as a glossary and appendices on the structure of a typical department and university and the standard academic ranks. Steven G. Krantz is an accomplished mathematician and an award-winning author. He has published 130 research articles and 45 books. He has worked in many different types of mathematics departments, supervised both masters and doctoral students, and is currently the Chair of the Mathematics Department at Washington University in St. Louis.

Significant Figures

An expansive collection of love letters to books, libraries, and reading, from a wonderfully eclectic array of thinkers and creators.

Beyond Infinity

This "how-to" book addresses all aspects of a young mathematicians' early career development: How do I get good letters of recommendation? How do I apply for a grant? How do I do research in a small department that has no one in my field? How do I do anything meaningful if all I can get is a series of one-year jobs? These articles paint a broad portrait of current professional development issues of interest from the Young Mathematician's Network—from finding jobs to organizing special sessions. There are chapters on applying for positions, working in industry and in academia, starting and publishing research, writing grant proposals, applying for tenure, and becoming involved in the academic community. The book offers timely and sound advice offered by recent doctorates through experienced mathematicians. The material originally appeared in the electronic pages of *Concerns of Young Mathematicians*. The book is devoted exclusively to the early stages of a mathematical career.

A Velocity of Being

This debut novel is a profoundly absurd campus satire about immortality, obsession, obscurity, and true love.

Why Beauty Is Truth

The present book contains the voluminous correspondence exchanged between the Swedish mathematician Gösta Mittag-Leffler and his younger Italian colleague Vito Volterra spanning a period of almost forty years at the end of the 19th and beginning of the 20th centuries. The relationship between the two men is remarkable for both personal and scientific reasons. Mittag-Leffler met Volterra for the first time as a brilliant young student of Ulisse Dini in Pisa. He was soon captivated by the creativity and the skills of the young man, and eventually became his mentor. Being himself at the center of a major scientific network,

Mittag-Leffler introduced Volterra to the major mathematicians of the time, especially the Germans (Weierstrass, Klein, Cantor) and French (Darboux, Jordan). In a few years, Volterra became the most prominent Italian mathematician and forged his own network of scientists all over Europe, and even in the United States which he was one of the first major European mathematicians to visit. Despite their difference in age, both men developed a deep and faithful friendship and their letters reflect the variety of themes of their exchanges. Of course, mathematics was the most prominent, and both men often used the letters as a first draft of their ideas and the addressee as a first judge of their soundness. Besides mathematics, they also touched upon many aspects of both private and public life: matrimony, children, holidays, politics and so on. This vast set of letters affords the reader a general overview of mathematical life at the turn of the 19th century and an appreciation of the European intellectual spirit which came to an end, or at least suffered a drastic turn, when the Great War broke out. Volterra and Mittag-Leffler's exchanges illustrate how general analysis, especially functional analysis, gained a dramatic momentum during those years, and how Volterra became one of the major leaders of the topic, opening the path for several fundamenta

Lectures and Problems: A Gift to Young Mathematicians

Mathematics today is approaching a state of crisis. As the demands of science and society for mathematical literacy increase, the percentage of American college students intending to major in mathematics plummets and achievement scores of entering college students continue their unremitting decline. As research in core mathematics reaches unprecedented heights of power and sophistication, the growth of diverse applied specialties threatens to fragment mathematics into distinct and frequently hostile mathematical sciences. These crises in mathematics presage difficulties for science and engineering, and alarms are beginning to sound in the scientific and even in the political communities. Citing a trend towards "virtual scientific and technological illiteracy" and a "shrinking of our national commitment to excellence . . . in science, mathematics and technology," a recent study conducted for the President by the U. S. National Science Foundation and Department of Education warns of serious impending shortcomings in public understanding of science. "Today people in a wide range of non scientific . . . professions must have a greater understanding of technology than at any time in our history. Yet our educational system does not now provide such understanding. " The study goes on to conclude that present trends pose great risk of manpower shortages in the mathematical and engineering sciences. "The pool from which our future scientific and engineering personnel can be drawn is . . . in danger of becoming smaller, even as the need for such personnel is increasing. " It is time to take a serious look at mathematics tomorrow.

Starting Our Careers

In *Five Golden Rules*, John L. Casti serves as curator to a brilliant collection of 20th-century mathematical theories, leading us on a fascinating journey of discovery and insight. Probing the frontiers of modern mathematics, Casti examines the origins of some of the most important findings of this century. This is a tale of mystery and logic, elegance and reason; it is the story of five monumental mathematical breakthroughs and how they shape our lives. All those intrigued by

the mathematical process, nonacademics and professionals alike, will find this an enlightening, eye-opening, and entertaining work. High school algebra or geometry - and enthusiasm - are the only prerequisites. From the theorem that provided the impetus for modern computers to the calculations that sent the first men to the Moon, these breakthroughs have transformed our lives. Casti illustrates each theorem with a dazzling array of real-world problems it has helped solve - how to calculate the shape of space, optimize investment returns, even chart the course of the development of organisms. Along the way, we meet the leading thinkers of the day: John von Neumann, L. E. J. Brouwer, Marston Morse, and Alan Turing, among others. And we come to understand the combination of circumstances that led each to such revolutionary discoveries as the Minimax Theorem, which spawned the exciting field of game theory, and the Simplex Method, which underpins the powerful tools of optimization theory.

Letters to a Young Mathematician

"One of the themes of the book is how to have a fulfilling professional life. In order to achieve this goal, Krantz discusses keeping a vigorous scholarly program going and finding new challenges, as well as dealing with the everyday tasks of research, teaching, and administration." "In short, this is a survival manual for the professional mathematician - both in academics and in industry and government agencies. It is a sequel to the author's A Mathematician's Survival Guide."--BOOK JACKET.

John Von Neumann

*Wall Street Journal's "Mysteries: Best of 2018" *Book of the Month Club Selection *Edgar Award Nominee: Best First Novel by an American Author A "hugely entertaining" (Wall Street Journal) mystery starring "a Royal Tenenbaums-esque clan of geniuses" (Martha Stewart Living)—perfect for fans of Mr. Penumbra's 24-Hour Bookstore. In this "riveting...brilliant" (Booklist) debut, Hazel Severy, the owner of a struggling Seattle bookstore, receives a letter from her adoptive grandfather—mathematician Isaac Severy—days after he dies in a suspected suicide. In his puzzling letter, Isaac alludes to a secretive organization that is after his final bombshell equation, and he charges Hazel with safely delivering it to a trusted colleague. But first, she must find where the equation is hidden. While in Los Angeles for Isaac's funeral, Hazel realizes she's not the only one searching for his life's work, and that the equation's implications have potentially disastrous consequences for the extended Severy family, a group of dysfunctional geniuses unmoored by the sudden death of their patriarch. As agents of an enigmatic company shadow Isaac's favorite son—a theoretical physicist—and a long-lost cousin mysteriously reappears in Los Angeles, the equation slips further from Hazel's grasp. She must unravel a series of confounding clues hidden inside one of her favorite novels, drawing her ever closer to his mathematical treasure. But when her efforts fall short, she is forced to enlist the help of those with questionable motives. "A novel that is anything but clueless, filled with consideration and compassion" (The Washington Post), *The Last Equation of Isaac Severy* proves that, like Hazel, you don't have to love math to fall under the Severy spell.

A Mathematician's Lament

As defender of both the righteous and the questionable, Alan Dershowitz has become perhaps the most famous and outspoken attorney in the land. Whether or not they agree with his legal tactics, most people would agree that he possesses a powerful and profound sense of justice. In this meditation on his profession, Dershowitz writes about life, law, and the opportunities that young lawyers have to do good and do well at the same time. We live in an age of growing dissatisfaction with law as a career, which ironically comes at a time of unprecedented wealth for many lawyers. Dershowitz addresses this paradox, as well as the uncomfortable reality of working hard for clients who are often without many redeeming qualities. He writes about the lure of money, fame, and power, as well as about the seduction of success. In the process, he conveys some of the "tricks of the trade" that have helped him win cases and become successful at the art and practice of "lawyering."

Flatterland

SHORTLISTED FOR THE 2017 ROYAL SOCIETY SCIENCE BOOK PRIZE Even small children know there are infinitely many whole numbers - start counting and you'll never reach the end. But there are also infinitely many decimal numbers between zero and one. Are these two types of infinity the same? Are they larger or smaller than each other? Can we even talk about 'larger' and 'smaller' when we talk about infinity? In *Beyond Infinity*, international maths sensation Eugenia Cheng reveals the inner workings of infinity. What happens when a new guest arrives at your infinite hotel - but you already have an infinite number of guests? How does infinity give Zeno's tortoise the edge in a paradoxical foot-race with Achilles? And can we really make an infinite number of cookies from a finite amount of cookie dough? Wielding an armoury of inventive, intuitive metaphor, Cheng draws beginners and enthusiasts alike into the heart of this mysterious, powerful concept to reveal fundamental truths about mathematics, all the way from the infinitely large down to the infinitely small.

Ramanujan

This arsenal of tips and techniques eases new students into undergraduate mathematics, unlocking the world of definitions, theorems, and proofs.

Letters of Euler on Different Subjects in Natural Philosophy

To many outsiders, mathematicians appear to think like computers, grimly grinding away with a strict formal logic and moving methodically--even algorithmically--from one black-and-white deduction to another. Yet mathematicians often describe their most important breakthroughs as creative, intuitive responses to ambiguity, contradiction, and paradox. A unique examination of this less-familiar aspect of mathematics, *How Mathematicians Think* reveals that mathematics is a profoundly creative activity and not just a body of formalized rules and results. Nonlogical qualities, William Byers shows, play an essential role in mathematics. Ambiguities, contradictions, and paradoxes can arise when ideas

developed in different contexts come into contact. Uncertainties and conflicts do not impede but rather spur the development of mathematics. Creativity often means bringing apparently incompatible perspectives together as complementary aspects of a new, more subtle theory. The secret of mathematics is not to be found only in its logical structure. The creative dimensions of mathematical work have great implications for our notions of mathematical and scientific truth, and *How Mathematicians Think* provides a novel approach to many fundamental questions. Is mathematics objectively true? Is it discovered or invented? And is there such a thing as a "final" scientific theory? Ultimately, *How Mathematicians Think* shows that the nature of mathematical thinking can teach us a great deal about the human condition itself.

The Last Equation of Isaac Severy

Imagine a giant snowflake in 196,884 dimensions This is the story of a mathematical quest that began two hundred years ago in revolutionary France, which led to the biggest collaboration ever between mathematicians across the world, and revealed the 'Monster' - a structure of beauty and complexity. And it is a story that is not yet over, for we have yet to understand the deep significance of the Monster - and its tantalising hints of connections with the physical structure of spacetime. Once we understand the full nature of the Monster, we may well have revealed a whole new and deeper understanding of the nature of our Universe.

Letters to a Young Scientist

Pulitzer Prize-winning biologist Edward O. Wilson imparts the wisdom of his storied career to the next generation. Edward O. Wilson has distilled sixty years of teaching into a book for students, young and old. Reflecting on his coming-of-age in the South as a Boy Scout and a lover of ants and butterflies, Wilson threads these twenty-one letters, each richly illustrated, with autobiographical anecdotes that illuminate his career—both his successes and his failures—and his motivations for becoming a biologist. At a time in human history when our survival is more than ever linked to our understanding of science, Wilson insists that success in the sciences does not depend on mathematical skill, but rather a passion for finding a problem and solving it. From the collapse of stars to the exploration of rain forests and the oceans' depths, Wilson instills a love of the innate creativity of science and a respect for the human being's modest place in the planet's ecosystem in his readers.

A Mathematician's Survival Guide

Dinesh D'Souza rose to national prominence as one of the founders of the *Dartmouth Review*, a leading voice in the rebirth of conservative politics on college campuses in the 1980s. He fired the first popular shot against political correctness with his best-selling exposé *Illiberal Education*. Now, after serving as a Reagan White House staffer, the managing editor of *Policy Review*, and a scholar at the American Enterprise Institute and the Hoover Institution, he addresses the next generation in *Letters to a Young Conservative*. Drawing on his own colorful experiences, both within the conservative world and while skirmishing with the left,

D'Souza aims to enlighten and inspire young conservatives and give them weapons for the intellectual battles that they face in high school, college, and everyday life. Letters to a Young Conservative also illuminates the enduring themes that for D'Souza anchor the conservative position: not "family values" or patriotism, but a philosophy based on natural rights and a belief in universal moral truths. With a light touch, D'Souza shows that conservatism needn't be stodgy or defensive, even though it is based on preserving the status quo. To the contrary, when a conservative has to expose basic liberal assumptions to scrutiny, he or she must become a kind of imaginative, fun-loving, forward-looking guerrilla--philosophically conservative but temperamentally radical. Among the topics Dinesh D'Souza covers in Letters to a Young Conservative: Fighting Political Correctness Authentic vs. Bogus Multiculturalism Why Government Is the Problem When the Rich Get Richer How Affirmative Action Hurts Blacks The Feminist Mistake All the News That Fits How to Harpoon a Liberal The Self-Esteem Hoax A Republican Realignment? Why Conservatives Should Be Cheerful

A Mathematician Plays The Stock Market

first there was Edwin A. Abbott's remarkable Flatland, published in 1884, and one of the all-time classics of popular mathematics. Now, from mathematician and accomplished science writer Ian Stewart, comes what Nature calls "a superb sequel." Through larger-than-life characters and an inspired story line, Flatter land explores our present understanding of the shape and origins of the universe, the nature of space, time, and matter, as well as modern geometries and their applications. The journey begins when our heroine, Victoria Line, comes upon her great-great-grandfather A. Square's diary, hidden in the attic. The writings help her to contact the Space Hopper, who tempts her away from her home and family in Flatland and becomes her guide and mentor through ten dimensions. In the tradition of Alice in Wonderland and The Phantom Toll Booth, this magnificent investigation into the nature of reality is destined to become a modern classic.

Gösta Mittag-Leffler and Vito Volterra. 40 Years of Correspondence

This textbook provides a unified and concise exploration of undergraduate mathematics by approaching the subject through its history. Readers will discover the rich tapestry of ideas behind familiar topics from the undergraduate curriculum, such as calculus, algebra, topology, and more. Featuring historical episodes ranging from the Ancient Greeks to Fermat and Descartes, this volume offers a glimpse into the broader context in which these ideas developed, revealing unexpected connections that make this ideal for a senior capstone course. The presentation of previous versions has been refined by omitting the less mainstream topics and inserting new connecting material, allowing instructors to cover the book in a one-semester course. This condensed edition prioritizes succinctness and cohesiveness, and there is a greater emphasis on visual clarity, featuring full color images and high quality 3D models. As in previous editions, a wide array of mathematical topics are covered, from geometry to computation; however, biographical sketches have been omitted. Mathematics and Its History: A Concise Edition is an essential resource for courses or reading programs on the

history of mathematics. Knowledge of basic calculus, algebra, geometry, topology, and set theory is assumed. From reviews of previous editions: "Mathematics and Its History is a joy to read. The writing is clear, concise and inviting. The style is very different from a traditional text. I found myself picking it up to read at the expense of my usual late evening thriller or detective novel. The author has done a wonderful job of tying together the dominant themes of undergraduate mathematics." Richard J. Wilders, MAA, on the Third Edition "The book is presented in a lively style without unnecessary detail. It is very stimulating and will be appreciated not only by students. Much attention is paid to problems and to the development of mathematics before the end of the nineteenth century. This book brings to the non-specialist interested in mathematics many interesting results. It can be recommended for seminars and will be enjoyed by the broad mathematical community." European Mathematical Society, on the Second Edition

The Grasshopper King

This work is in the form of letters written by an old philosopher, at the end of his career and life, to a young student. The letters cover a comprehensive introduction to philosophy, wisdom, and the art of thinking. Inspired from Letters to a Young Poet by Rainer Maria Rilke, the letters of the old philosopher guide, instruct, and pass on wisdom to the student. In a lucid and conversational style, the old philosopher instructs the student on a range of issues such as love, education, friendship, violence, ignorance, mediocrity, and happiness. The style is both philosophical and literary.

Mathematics and Its History

"Using the mathematician's method of analyzing life and exposing the hard-won insights of the academic community to the layman, minus the jargon Ellenberg pulls from history as well as from the latest theoretical developments to provide those not trained in math with the knowledge they need"--

Letters to a Young Lawyer

"Art of Mentoring" series In the book that he was born to write, provocateur and best-selling author Christopher Hitchens inspires future generations of radicals, gadflies, mavericks, rebels, angry young (wo)men, and dissidents. Who better to speak to that person who finds him or herself in a contrarian position than Hitchens, who has made a career of disagreeing in profound and entertaining ways. This book explores the entire range of "contrary positions"-from noble dissident to gratuitous pain in the butt. In an age of overly polite debate bending over backward to reach a happy consensus within an increasingly centrist political dialogue, Hitchens pointedly pitches himself in contrast. He bemoans the loss of the skills of dialectical thinking evident in contemporary society. He understands the importance of disagreement-to personal integrity, to informed discussion, to true progress-heck, to democracy itself. Epigrammatic, spunky, witty, in your face, timeless and timely, this book is everything you would expect from a mentoring contrarian.

How Mathematicians Think

Welcome to Ian Stewart's strange and magical world of mathematics! In *Math Hysteria*, Professor Stewart presents us with a wealth of magical puzzles, each one spun around an amazing tale: *Counting the Cattle of the Sun*; *The Great Drain Robbery*; and *Preposterous Piratical Predicaments*; to name but a few. Along the way, we also meet many curious characters: in short, these stories are engaging, challenging, and lots of fun!

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