A Mathematician Plays The Market

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Fortune's Formula William Poundstone 2010-06-01 In 1956, two Bell Labs scientists discovered the scientific formula for getting rich. One was mathematician Claude Shannon, neurotic father of our digital age, whose genius is ranked with Einstein's. The other was John L. Kelly Jr., a Texas-born, gun-toting physicist. Together they applied the science of information theory—the basis of computers and the Internet—to the problem of making as much money as possible, as fast as possible. Shannon and MIT mathematician Edward O. Thorp took the "Kelly formula" to Las Vegas. It worked. They realized that there was even more money to be made in the stock market. Thorp used the Kelly system with his phenomenally successful hedge fund, Princeton-Newport Partners. Shannon became a successful investor, too, topping even Warren Buffett's rate of return. Fortune's Formula traces how the Kelly formula sparked controversy even as it made fortunes at racetracks, casinos, and trading desks. It reveals the dark side of this alluring scheme, which is founded on exploiting an insider's edge. Shannon believed it was possible for a smart investor to beat the market—and William Poundstone's Fortune's Formula will convince you that he was right.

The Man Who Solved the Market Gregory Zuckerman 2019-11-05 NEW YORK TIMES BESTSELLER Shortlisted for the Financial Times/McKinsey Business Book of the Year Award The unbelievable story of a secretive mathematician who pioneered the era of the algorithm--and made $23 billion doing it. Jim Simons is the greatest money maker in modern financial history. No other investor--Warren Buffett, Peter Lynch, Ray Dalio, Steve Cohen, or George Soros--can touch his record. Since 1988, Renaissance's signature Medallion fund has generated average annual returns of 66 percent. The firm has earned profits of more than $100 billion; Simons is worth twenty-three billion dollars. Drawing on unprecedented access to Simons and dozens of current and former employees, Zuckerman, a veteran Wall Street Journal investigative reporter, tells the gripping story of how a world-class mathematician and former code breaker mastered the market. Simons pioneered a data-driven, algorithmic approach that's sweeping the world. As Renaissance became a market force, its executives began influencing the world beyond finance. Simons became a major figure in scientific research, education, and liberal politics. Senior executive Robert Mercer is more responsible than anyone else for the Trump presidency, placing Steve Bannon in the campaign and funding Trump's victorious 2016 effort. Mercer also impacted the campaign behind Brexit. The Man Who Solved the Market is a portrait of a modern-day Midas who remade markets in his own image, but failed to anticipate how his success would impact his firm and his country. It's also a story of what Simons's revolution means for the rest of us.

The 3% Signal Jason Kelly 2015-02-24 Take the stress out of investing with this revolutionary new strategy from the author of The Neatest Little Guide to Stock Market Investing, now in its fifth edition. In today's troubling economic times, the quality of our retirement depends upon our own portfolio management. But for most of us, investing can be stressful and confusing, especially when supposedly expert predictions fail. Enter The 3% Signal. Simple and effective, Kelly's plan can be applied to any type of account, including 401(k)s—and requires only fifteen minutes of strategizing per quarter. No stress. No noise. No confusion. By targeting three percent growth and adjusting holdings to meet that goal, even novice investors can level the financial playing field and ensure a secure retirement free from the stress of noisy advice that doesn't work. The plan's simple technique cuts through the folly of human emotion by reacting intelligently to price changes and automatically buying low and selling high. Relayed in the same easy-to-understand language that has made The Neatest Little Guide to Stock Market Investing such a staple in the investing community, The 3% Signal is sure to become your most trusted guide to investing success.

The Physics of Wall Street James Owen Weatherall 2013 A Harvard scholar argues that mathematical models can provide solutions to current economic challenges, explaining that the economic meltdown of 2008 was based on a misunderstanding of scientific models rather than on the models themselves.

The Money Formula Paul Wilmott 2017-03-06 Explore the deadly elegance of finance's hidden powerhouse The Money Formula takes you inside the engine room of the global economy to explore the little-understood world of quantitative finance, and show how the future of our economy rests on the backs of this all-but-impenetrable industry. Written not from a post-crisis perspective – but from a preventative point of view – this book traces the development of financial derivatives from bonds to credit default swaps, and shows how mathematical formulas went beyond pricing to expand their use to the point where they dwarfed the real economy. You'll learn how the deadly allure of their ice-cold beauty has misled generations of economists and investors, and how continued reliance on these formulas can either assist future economic development, or send the global economy into the financial equivalent of a cardiac arrest. Rather than rehash tales of post-crisis fallout, this book focuses on preventing the next one. By exploring the heart of the shadow economy, you'll be better prepared to ride the rough waves of finance into the turbulent future. Delve into one of the world's least-understood but highest-impact industries Understand the key principles of quantitative finance and the evolution of the field Learn what quantitative finance has become, and how it affects us all Discover how the industry's next steps dictate the economy's future How do you create a quadrillion dollars out of nothing, blow it away and leave a hole so large that even years of "quantitative easing" can't fill it – and then go back to doing the same thing? Even amidst global recovery, the financial system still has the potential to seize up at any moment. The Money Formula explores the how and why of financial disaster, what must happen to prevent the next one.

How to Free Your Inner Mathematician Susan D'Agostino 2020-03-26 How to Free Your Inner Mathematician: Notes on Mathematics and Life offers readers guidance in managing the fear, freedom, frustration, and joy that often accompany calls to think mathematically. With practical insight and years of award-winning mathematics teaching experience, D'Agostino offers more than 300 hand-drawn sketches alongside accessible descriptions of fractals, symmetry, fuzzy logic, knot theory, Penrose patterns, infinity, the Twin Prime Conjecture, Arrow's Impossibility Theorem, Fermat's Last Theorem, and other intriguing mathematical topics. Readers are encouraged to embrace change, proceed at their own pace, mix up their routines, resist comparison, have faith, fail more often, look for beauty, exercise their imaginations, and define success for themselves. Mathematics students and enthusiasts will learn advice for fostering courage on their journey regardless of age or mathematical background. How to Free Your Inner Mathematician delivers not only engaging mathematical content but provides reassurance that mathematical success has more to do with curiosity and drive than innate aptitude.

An Engine, Not a Camera Donald MacKenzie 2008-08-29 In An Engine, Not a Camera, Donald MacKenzie argues that the emergence of modern economic theories of finance affected financial markets in fundamental ways. These new, Nobel Prize-winning theories, based on elegant mathematical models of markets, were not simply external analyses but intrinsic parts of economic processes. Paraphrasing Milton Friedman, MacKenzie says that economic models are an engine of inquiry rather than a camera to reproduce empirical facts. More than that, the emergence of an authoritative theory of financial markets altered those markets fundamentally. For example, in 1970, there was almost no trading in financial derivatives such as "futures." By June of 2004, derivatives contracts totaling $273 trillion were outstanding worldwide. MacKenzie suggests that this growth could never have happened without the development of theories that gave derivatives legitimacy and explained their complexities. MacKenzie examines the role played by finance theory in the two most serious crises to hit the world's financial markets in recent years: the stock market crash of 1987 and the market turmoil that engulfed the hedge fund Long-Term Capital Management in 1998. He also looks at finance theory that is somewhat beyond the mainstream—chaos theorist Benoit Mandelbrot's model of "wild" randomness. MacKenzie's pioneering work in the social studies of finance will interest anyone who wants to understand how America's financial markets have grown into their current form.

The Mathematical Theory of Communication Claude E Shannon 1998-09-01 Scientific knowledge grows at a phenomenal pace--but few books have had as lasting an impact or played as important a role in our modern world as The Mathematical Theory of Communication, published originally as a paper on communication theory more than fifty years ago. Republished in book form shortly thereafter, it has since gone through four hardcover and sixteen paperback printings. It is a revolutionary work, astounding in its foresight and contemporaneity. The University of Illinois Press is pleased and honored to issue this commemorative reprinting of a classic.

Dark Pools Scott Patterson 2012-06-12 A news-breaking account of the global stock market's subterranean battles, Dark Pools portrays the rise of the "bots"--artificially intelligent systems that execute trades in milliseconds and use the cover of darkness to out-maneuver the humans who've created them. In the beginning was Josh Levine, an idealistic programming genius who dreamed of wresting control of the market from the big exchanges that, again and again, gave the giant institutions an advantage over the little guy. Levine created a computerized trading hub named Island where small traders swapped stocks, and over time his invention morphed into a global electronic stock market that sent trillions in capital through a vast jungle of fiber-optic cables. By then, the market that Levine had sought to fix had turned upside down, birthing secretive exchanges called dark pools and a new species of trading machines that could think, and that seemed, ominously, to be slipping the control of their human masters. Dark Pools is the fascinating story of how global markets have been hijacked by trading robots--many so self-directed that humans can't predict what they'll do next.

Irreligion John Allen Paulos 2009-06-09 Argues that there is no logical reason to believe in God, refuting twelve arguments commonly proposed to prove the existence of God, while offering commentary on such topics as miracles, cognitive illusions, and creationist probability.

Mathematics and Statistics for Financial Risk Management Michael B. Miller 2013-12-31 Mathematics and Statistics for Financial Risk Management is a practical guide to modern financial risk management for both practitioners and academics. Now in its second edition with more topics, more sample problems and more real world examples, this popular guide to financial risk management introduces readers to practical quantitative techniques for analyzing and managing financial risk. In a concise and easy-to-read style, each chapter introduces a different topic in mathematics or statistics. As different techniques are introduced, sample problems and application sections demonstrate how these techniques can be applied to actual risk management problems. Exercises at the end of each chapter and the accompanying solutions at the end of the book allow readers to practice the techniques they are learning and monitor their progress. A companion Web site includes interactive Excel spreadsheet examples and templates. Mathematics and Statistics for Financial Risk Management is an indispensable reference for today's financial risk professional.

Introduction to the Economics and Mathematics of Financial Markets Jaksa Cvitanic 2004-02-27 An innovative textbook for use in advanced undergraduate and graduate courses; accessible to students in financial mathematics, financial engineering and economics. Introduction to the Economics and Mathematics of Financial Markets fills the longstanding need for an accessible yet serious textbook treatment of financial economics. The book provides a rigorous overview of the subject, while its flexible presentation makes it suitable for use with different levels of undergraduate and graduate students. Each chapter presents mathematical models of financial problems at three different degrees of sophistication: single-period, multi-period, and continuous-time. The single-period and

multi-period models require only basic calculus and an introductory probability/statistics course, while an advanced undergraduate course in probability is helpful in understanding the continuous-time models. In this way, the material is given complete coverage at different levels; the less advanced student can stop before the more sophisticated mathematics and still be able to grasp the general principles of financial economics. The book is divided into three parts. The first part provides an introduction to basic securities and financial market organization, the concept of interest rates, the main mathematical models, and quantitative ways to measure risks and rewards. The second part treats option pricing and hedging; here and throughout the book, the authors emphasize the Martingale or probabilistic approach. Finally, the third part examines equilibrium models—a subject often neglected by other texts in financial mathematics, but included here because of the qualitative insight it offers into the behavior of market participants and pricing.

The One Percent Doctrine Ron Suskind 2008-09-04 In his devastating new book Pulitzer Prize-winning journalist Ron Suskind takes readers inside the defining conflict of our era: the war between the West and a growing, shadowy army of terrorists, armed with weapons of alarming power. Relying on unique access to former and current government officials, this book will reveal for the first time how the US government -- from President Bush on down -- is frantically improvising to fight a new kind of war. Where is the enemy? What have been the real victories and defeats since 9/11? How are we actually fighting this war and how can it possibly be won? Filled with astonishing disclosures, Suskind's book shows readers what he calls "the invisible battlefield" -- a global matrix where US spies race to catch soldiers of jihad before they strike. It is a real-life spy thriller with the world's future at stake. It also reveals the shocking and secret philosophy underpinning the war on terror. Gripping and alarming in equal measure, it will reframe the debate about a war that, each day, redefines America and its place in the world.

The Mathematics of Options Michael C. Thomsett 2017-08-30 This book is written for the experienced portfolio manager and professional options traders. It is a practical guide offering how to apply options math in a trading world that demands mathematical measurement. Every options trader deals with an array of calculations: beginners learn to identify risks and opportunities using a short list of strategies, while researchers and academics turn to advanced technical manuals. However, almost no books exist for the experienced portfolio managers and professional options traders who fall between these extremes. Michael C. Thomsett addresses this glaring gap with The Mathematics of Options, a practical guide with actionable tools for the practical application of options math in a world that demands quantification. It serves as a valuable reference for advanced methods of evaluating issues of pricing, payoff, probability, and risk. In his characteristic approachable style, Thomsett simplifies complex hot button issues—such as strategic payoffs, return calculations, and hedging options—that may be mentioned in introductory texts but are often underserved. The result is a comprehensive book that helps traders understand the mathematic concepts of options trading so that they can improve their skills and outcomes.

A Mathematician Reads the Newspaper John Allen Paulos 2013-09-10 John Allen Paulos is a master at shedding mathematical lights on our everyday world:What exactly did Lani Guinier say about quotas?What is the probability of identifying a murderer through DNA testing?Which are the real risks to our health and which the phony ones?Employing the same fun-filled, user-friendly, and quirkily insightful approach that put Innumeracy on best-seller lists, Paulos now leads us through the pages of the daily newspaper, revealing the hidden mathematical angles of countless articles. From the Senate, the SATs, and sex to crime, celebrities, and cults, Paulos takes stories that may not seem to involve mathematics at all and demonstrates how mathematical naïtéan put readers at a distinct disadvantage.Whether he's using chaos theory to puncture economic and environmental predictions, applying logic and self-reference to clarify the hazards of spin doctoring and news compression, or employing arithmetic and common sense to give us a novel perspective on greed and relationships, Paulos never fails to entertain and enlighten.Even if you hated math in school, you'll love the numerical vignettes in this book.

Do Dice Play God? Ian Stewart 2019-06-06 Uncertainty is everywhere. It lurks in every consideration of the future - the weather, the economy, the sex of an unborn child - even quantities we think that we know such as populations or the transit of the planets contain the possibility of error. It's no wonder that, throughout history, we have attempted to produce rigidly defined areas of uncertainty - we prefer the surprise party to the surprise asteroid. We began our quest to make certain an uncertain world by reading omens in livers, tea leaves, and the stars. However, over the centuries, driven by curiosity, competition, and a desire be better gamblers, pioneering mathematicians and scientists began to reduce wild uncertainties to tame distributions of probability and statistical inferences. But, even as unknown unknowns became known unknowns, our pessimism made us believe that some problems were unsolvable and our intuition misled us. Worse, as we realized how omnipresent and varied uncertainty is, we encountered chaos, quantum mechanics, and the limitations of our predictive power. Bestselling author Professor Ian Stewart explores the history and mathematics of uncertainty. Touching on gambling, probability, statistics, financial and weather forecasts, censuses, medical studies, chaos, quantum physics, and climate, he makes one thing clear: a reasonable probability is the only certainty.

A Mathematician Plays the Market John Allen Paulos 2004 Paulos offers a hilarious account of how the stock market both follows and defies mathematical principals. He offers an engaging overview of probabilities from "betas" to the efficient market hypothesis.

Innumeracy John Allen Paulos 2011-04-01 Why do even well-educated people understand so little about mathematics? And what are the costs of our innumeracy? John Allen Paulos, in his celebrated bestseller first published in 1988, argues that our inability to deal rationally with very large numbers and the probabilities associated with them results in misinformed governmental policies, confused personal decisions, and an increased susceptibility to pseudoscience of all kinds. Innumeracy lets us know what we're missing, and how we can do something about it. Sprinkling his discussion of numbers and probabilities with quirky stories and anecdotes, Paulos ranges freely over many aspects of modern life, from contested elections to sports stats, from stock scams and newspaper psychics to diet and medical claims, sex discrimination, insurance, lotteries, and drug testing. Readers of Innumeracy will be rewarded with scores of astonishing facts, a fistful of powerful ideas, and, most important, a clearer, more quantitative way of looking at their world.

Humble Pi Matt Parker 2020-01-21 #1 INTERNATIONAL BESTSELLER AN ADAM SAVAGE BOOK CLUB PICK The book-length answer to anyone who ever put their hand up in math class and asked, "When am I ever going to use this in the real world?" "Fun, informative, and relentlessly entertaining, Humble Pi is a charming and very readable guide to some of humanity's all-time greatest miscalculations—that also gives you permission to feel a little better about some of your own mistakes." —Ryan North, author of How to Invent Everything Our whole world is built on math, from the code running a website to the equations enabling the design of skyscrapers and bridges. Most of the time this math works quietly behind the scenes . . . until it doesn't. All sorts of seemingly innocuous mathematical mistakes can have significant consequences. Math is easy to ignore until a misplaced decimal point upends the stock market, a unit conversion error causes a plane to crash, or someone divides by zero and stalls a battleship in the middle of the ocean. Exploring and explaining a litany of glitches, near misses, and mathematical mishaps involving the internet, big data, elections, street signs, lotteries, the Roman Empire, and an Olympic team, Matt Parker uncovers the bizarre ways math trips us up, and what this reveals about its essential place in our world. Getting it wrong has never been more fun.

Play Bigger Al Ramadan 2016-06-14 The founders of a respected Silicon Valley advisory firm study legendary category-creating companies and reveal a groundbreaking discipline called category design. Winning today isn't about beating the competition at the old game. It's about inventing a whole new game—defining a new market category, developing it, and dominating it over time. You can't build a legendary company without building a legendary category. If you think that having the best product is all it takes to win, you're going to lose. In this farsighted, pioneering guide, the founders of Silicon Valley advisory firm Play Bigger rely on data analysis and interviews to understand the inner workings of "category kings"— companies such as Amazon, Salesforce, Uber, and IKEA—that give us new ways of living, thinking or doing business, often solving problems we didn't know we had. In Play Bigger, the authors assemble their findings to introduce the new discipline of category design. By applying category design, companies can create new demand where none existed, conditioning customers' brains so they change their expectations and buying habits. While this discipline defines the tech industry, it applies to every kind of industry and even to personal careers. Crossing the Chasm revolutionized how we think about new products in an existing market. The Innovator's Dilemma taught us about disrupting an aging market. Now, Play Bigger is transforming business once again, showing us how to create the market itself.

The (Mis)Behaviour of Markets Benoit B. Mandelbrot 2010-10-01 This international bestseller, which foreshadowed a market crash, explains why it could happen again if we don't act now. Fractal geometry is the mathematics of roughness: how to reduce the outline of a jagged leaf or static in a computer connection to a few simple mathematical properties. With his fractal tools, Mandelbrot has got to the bottom of how financial markets really work. He finds they have a shifting sense of time and wild behaviour that makes them volatile, dangerous - and beautiful. In his models, the complex gyrations of the FTSE 100 and exchange rates can be reduced to straightforward formulae that yield a much more accurate description of the risks involved.

Networks, Crowds, and Markets David Easley 2010-07-19 Are all film stars linked to Kevin Bacon? Why do the stock markets rise and fall sharply on the strength of a vague rumour? How does gossip spread so quickly? Are we all related through six degrees of separation? There is a growing awareness of the complex networks that pervade modern society. We see them in the rapid growth of the Internet, the ease of global communication, the swift spread of news and information, and in the way epidemics and financial crises develop with startling speed and intensity. This introductory book on the new science of networks takes an interdisciplinary approach, using economics, sociology, computing, information science and applied mathematics to address fundamental questions about the links that connect us, and the ways that our decisions can have consequences for others.

Uncle Petros and Goldbach's Conjecture Apostolos Doxiadis 2012-11-15 Uncle Petros is a family joke. An ageing recluse, he lives alone in a suburb of Athens, playing chess and tending to his garden. If you didn't know better, you'd surely think he was one of life's failures. But his young nephew suspects otherwise. For Uncle Petros, he discovers, was once a celebrated mathematician, brilliant and foolhardy enough to stake everything on solving a problem that had defied all attempts at proof for nearly three centuries - Goldbach's Conjecture. His quest brings him into contact with some of the century's greatest mathematicians, including the Indian prodigy Ramanujan and the young Alan Turing. But his struggle is lonely and single-minded, and by the end it has apparently destroyed his life. Until that is a final encounter with his nephew opens up to Petros, once more, the deep mysterious beauty of mathematics. Uncle Petros and Goldbach's Conjecture is an inspiring novel of intellectual adventure, proud genius, the exhilaration of pure mathematics - and the rivalry and antagonism which torment those who pursue impossible goals.

The New Market Wizards Jack D. Schwager 2012-10-10 Praise for THE NEW MARKET WIZARDS "Jack Schwager simply writes the best books about trading

I've ever read. These interviews always give me a lot to think about. If you like learning about traders and trading, you'll find that reading this book is time well spent." -Richard Dennis, President, The Dennis Trading Group, Inc. "Jack Schwager's deep knowledge of the markets and his extensive network of personal contacts throughout the industry have set him apart as the definitive market chronicler of our age." -Ed Seykota "Very interesting indeed!" -John Train, author of The Money Masters "Successful trading demands longtime experience because it requires firsthand knowledge. If there is a shortcut to this requirement, however, it is in reading about the experiences of others. Jack Schwager's book provides that shortcut. If you find yourself sweating upon occasion as you read, then you're as close to the trading experience as you can get without actually doing it yourself." -Robert R. Prechter, Jr., editor, The Elliott Wave Theorist THE NEW MARKET WIZARDS Some traders distinguish themselves from the herd. These supertraders make millions of dollars-sometimes in hours-and consistently outperform their peers. As he did in his acclaimed national bestseller, Market Wizards, Jack Schwager interviews a host of these supertraders, spectacular winners whose success occurs across a spectrum of financial markets. These traders use different methods, but they all share an edge. How do they do it? What separates them from the others? What can they teach the average trader or investor? In The New Market Wizards, these wildly successful traders relate the financial strategies that have rocketed them to success, as well as the embarrassing losses that have proven them all too human. Meet the Wizards of Wall Street: * Stan Druckenmiller, who, as manager of the Soros Quantum Fund, realized an average annual return of more than 38 percent on assets ranging between $2.0 and $3.5 billion * William Eckhardt, a mathematician who, in collaboration with trader Richard Dennis, selected and trained the now-legendary circle known as the Turtles * Bill Lipschutz, a former architect who, for eight years, was Salomon Brothers' largest and most successful currency trader * Blair Hull, a one-time blackjack player who began an options trading company with Asking the questions that readers with an interest in the financial markets would love to pose to the financial superstars, and filled with candid appraisals, The New Market Wizards takes its place as a classic.

A Man for All Markets Edward O. Thorp 2017-01-24 The incredible true story of the card-counting mathematics professor who taught the world how to beat the dealer and, as the first of the great quantitative investors, ushered in a revolution on Wall Street. A child of the Great Depression, legendary mathematician Edward O. Thorp invented card counting, proving the seemingly impossible: that you could beat the dealer at the blackjack table. As a result he launched a gambling renaissance. His remarkable success—and mathematically unassailable method—caused such an uproar that casinos altered the rules of the game to thwart him and the legions he inspired. They barred him from their premises, even put his life in jeopardy. Nonetheless, gambling was forever changed. Thereafter, Thorp shifted his sights to "the biggest casino in the world": Wall Street. Devising and then deploying mathematical formulas to beat the market, Thorp ushered in the era of quantitative finance we live in today. Along the way, the so-called godfather of the quants played bridge with Warren Buffett, crossed swords with a young Rudy Giuliani, detected the Bernie Madoff scheme, and, to beat the game of roulette, invented, with Claude Shannon, the world's first wearable computer. Here, for the first time, Thorp tells the story of what he did, how he did it, his passions and motivations, and the curiosity that has always driven him to disregard conventional wisdom and devise game-changing solutions to seemingly insoluble problems. An intellectual thrill ride, replete with practical wisdom that can guide us all in uncertain financial waters, A Man for All Markets is an instant classic—a book that challenges its readers to think logically about a seemingly irrational world. Praise for A Man for All Markets "In A Man for All Markets, [Thorp] delightfully recounts his progress (if that is the word) from college teacher to gambler to hedge-fund manager. Along the way we learn important lessons about the functioning of markets and the logic of investment."—The Wall Street Journal "[Thorp] gives a biological summation (think Richard Feynman's Surely You're Joking, Mr. Feynman!) of his quest to prove the aphorism 'the house always wins' is flawed. . . . Illuminating for the mathematically inclined, and cautionary for would-be gamblers and day traders"—Library Journal

Once Upon A Number John Allen Paulos 2008-08-04 What two things could be more different than numbers and stories? Numbers are abstract, certain, and eternal, but to most of us somewhat dry and bloodless. Good stories are full of life: they engage our emotions and have subtlety and nuance, but they lack rigor and the truths they tell are elusive and subject to debate. As ways of understanding the world around us, numbers and stories seem almost completely incompatible. Once Upon A Number shows that stories and numbers aren't as different as you might imagine, and in fact they have surprising and fascinating connections. The concepts of logic and probability both grew out of intuitive ideas about how certain situations would play out. Now, logicians are inventing ways to deal with real world situations by mathematical means -- by acknowledging, for instance, that items that are mathematically interchangeable may not be interchangeable in a story. And complexity theory looks at both number strings and narrative strings in remarkably similar terms. Throughout, renowned author John Paulos mixes numbers and narratives in his own delightful style. Along with lucid accounts of cutting-edge information theory we get hilarious anecdotes and jokes; instructions for running a truly impressive pyramid scam; a freewheeling conversation between Groucho Marx and Bertrand Russell (while they're stuck in an elevator together); explanations of why the statistical evidence against OJ Simpson was overwhelming beyond doubt and how the Unabomber's thinking shows signs of mathematical training; and dozens of other treats. This is another winner from America's favorite mathematician.

Shape Jordan Ellenberg 2021-05-25 An instant New York Times Bestseller! "Unreasonably entertaining . . . reveals how geometric thinking can allow for everything from fairer American elections to better pandemic planning." —The New York Times From the New York Times-bestselling author of How Not to Be Wrong—himself a world-class geometer—a far-ranging exploration of the power of geometry, which turns out to help us think better about practically everything. How should a democracy choose its representatives? How can you stop a pandemic from sweeping the world? How do computers learn to play Go, and why is learning Go so much easier for them than learning to read a sentence? Can ancient Greek proportions predict the stock market? (Sorry, no.) What should your kids learn in school if they really want to learn to think? All these are questions about geometry. For real. If you're like most people, geometry is a sterile and dimly remembered exercise you gladly left behind in the dust of ninth grade, along with your braces and active romantic interest in pop singers. If you recall any of it, it's plodding through a series of miniscule steps only to prove some fact about triangles that was obvious to you in the first place. That's not geometry. Okay, it is geometry, but only a tiny part, which has as much to do with geometry in all its flush modern richness as conjugating a verb has to do with a great novel. Shape reveals the geometry underneath some of the most important scientific, political, and philosophical problems we face. Geometry asks: Where are things? Which things are near each other? How can you get from one thing to another thing? Those are important questions. The word "geometry"comes from the Greek for "measuring the world." If anything, that's an undersell. Geometry doesn't just measure the world—it explains it. Shape shows us how.

The Quants Scott Patterson 2010-02-02 With the immediacy of today's NASDAQ close and the timeless power of a Greek tragedy, The Quants is at once a masterpiece of explanatory journalism, a gripping tale of ambition and hubris, and an ominous warning about Wall Street's future. In March of 2006, four of the world's richest men sipped champagne in an opulent New York hotel. They were preparing to compete in a poker tournament with million-dollar stakes, but those numbers meant nothing to them. They were accustomed to risking billions. On that night, these four men and their cohorts were the new kings of Wall Street. Muller, Griffin, Asness, and Weinstein were among the best and brightest of a new breed, the quants. Over the prior twenty years, this species of math whiz--technocrats who make billions not with gut calls or fundamental analysis but with formulas and high-speed computers--had usurped the testosterone-fueled, kill-or-be-killed risk-takers who'd long been the alpha males the world's largest casino. The quants helped create a digitized money-trading machine that could shift billions around the globe with the click of a mouse. Few realized, though, that in creating this unprecedented machine, men like Muller, Griffin, Asness and Weinstein had sowed the seeds for history's greatest financial disaster. Drawing on unprecedented access to these four number-crunching titans, The Quants tells the inside story of what they thought and felt in the days and weeks when they helplessly watched much of their net worth vaporize--and wondered just how their mind-bending formulas and genius-level IQ's had led them so wrong, so fast.

Stock Market Math Michael C. Thomsett 2017-11-20 Stock Market Math shows you how to calculate return, leverage, risk, fundamental and technical analysis problems, price, volume, momentum and moving averages, including over 125 formulas and Excel programs for each, enabling readers to simply plug formulas into a spread sheet. This book is the definitive reference for all investors and traders. It introduces the many formulas and legends every investor needs, and explains their application through examples and narrative discussions providing the Excel spreadsheet programs for each. Readers can find instant answers to every calculation required to pick the best trades for your portfolio, quantify risk, evaluate leverage, and utilize the best technical indicators. Michael C. Thomsett is a market expert, author, speaker and coach. His many books include Mathematics of Options, Real Estate Investor's Pocket Calculator, and A Technical Approach to Trend Analysis. In Stock Market Math, the author advances the science of risk management and stock evaluation with more than 50 endnotes, 50 figures and tables, and a practical but thoughtful exploration of how investors and traders may best quantify their portfolio decisions.

Genius At Play Siobhan Roberts 2015-07-14 Inside the eccentric world of John Horton Conway, gifted polymath and inventor of the Game of Life.

The Man from the Future: The Visionary Ideas of John von Neumann Ananyo Bhattacharya 2022-02-22 An electrifying biography of one of the most extraordinary scientists of the twentieth century and the world he made. The smartphones in our pockets and computers like brains. The vagaries of game theory and evolutionary biology. Nuclear weapons and self-replicating spacecrafts. All bear the fingerprints of one remarkable, yet largely overlooked, man: John von Neumann. Born in Budapest at the turn of the century, von Neumann is one of the most influential scientists to have ever lived. A child prodigy, he mastered calculus by the age of eight, and in high school made lasting contributions to mathematics. In Germany, where he helped lay the foundations of quantum mechanics, and later at Princeton, von Neumann's colleagues believed he had the fastest brain on the planet—bar none. He was instrumental in the Manhattan Project and the design of the atom bomb; he helped formulate the bedrock of Cold War geopolitics and modern economic theory; he created the first ever programmable digital computer; he prophesized the potential of nanotechnology; and, from his deathbed, he expounded on the limits of brains and computers—and how they might be overcome. Taking us on an astonishing journey, Ananyo Bhattacharya explores how a combination of genius and unique historical circumstance allowed a single man to sweep through a stunningly diverse array of fields, sparking revolutions wherever he went. The Man from the Future is an insightful and thrilling intellectual biography of the visionary thinker who shaped our century.

Fooled by Randomness Nassim Nicholas Taleb 2008-10-14 Fooled by Randomness is a standalone book in Nassim Nicholas Taleb's landmark Incerto series, an investigation of opacity, luck, uncertainty, probability, human error, risk, and decision-making in a world we don't understand. The other books in the series are The Black Swan, Antifragile, Skin in the Game, and The Bed of Procrustes. Fooled by Randomness is the word-of-mouth sensation that will change the way you think about business and the world. Nassim Nicholas Taleb–veteran trader, renowned risk expert, polymathic scholar, erudite raconteur, and New York Times bestselling author of The Black Swan–has written a modern classic that turns on its head what we believe about luck and skill. This book is about luck–or more precisely, about how we perceive and deal with luck in life and business. Set against the backdrop of the most conspicuous forum in which luck is mistaken for skill–the world of trading–Fooled by Randomness provides captivating insight into one of the least understood factors in all our lives. Writing in an entertaining narrative style, the author tackles major intellectual issues related to the underestimation of the influence of happenstance on our lives. The book is populated with an array of characters, some of whom have grasped, in their own way, the significance of chance: the baseball legend Yogi Berra; the philosopher of knowledge Karl Popper; the ancient world's wisest man, Solon; the modern financier George Soros; and the Greek voyager Odysseus. We also meet the fictional Nero, who seems to understand the role of randomness in his professional life but falls victim to his own superstitious foolishness. However, the most recognizable character of all remains unnamed–the lucky fool who happens to be in the right place at the right time–he embodies the "survival of the least fit." Such individuals attract devoted followers who believe in their guru's insights and methods. But no one can replicate what is obtained by chance. Are we capable of distinguishing the fortunate charlatan from the genuine visionary? Must we always try to uncover nonexistent messages in random events? It may be impossible to guard ourselves against the vagaries of the goddess Fortuna, but after reading Fooled by Randomness we can be a little better prepared. Named by Fortune One of the Smartest Books of All Time A Financial Times Best Business Book of the Year

A Mathematician's Lament Paul Lockhart 2009-04-01 "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.

A Mathematician Plays The Stock Market John Allen Paulos 2007-10-11 Can a renowned mathematician successfully outwit the stock market? Not when his biggest investment is WorldCom. In A Mathematician Plays the Stock Market , best-selling author John Allen Paulos employs his trademark stories, vignettes, paradoxes, and puzzles to address every thinking reader's curiosity about the market -- Is it efficient? Is it random? 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? Are there any approaches to investing that truly outperform the major indexes? But Paulos's tour through the irrational exuberance of market mathematics doesn't end there. An unrequited (and financially disastrous) love affair with WorldCom leads Paulos to question some cherished ideas of personal finance. He explains why "data mining" is a self-fulfilling belief, why "momentum investing" is nothing more than herd behavior with a lot of mathematical jargon added, why the ever-popular Elliot Wave Theory cannot be correct, and why you should take Warren Buffet's "fundamental analysis" with a grain of salt. Like Burton Malkiel's A Random Walk Down Wall Street , this clever and illuminating book is for anyone, investor or not, who follows the markets -- or knows someone who does.

Beyond Numeracy John Allen Paulos 2013-05-29 From the author of the national bestseller Innumeracy, a delightful exploration and explanation of mathematical concepts from algebra to zero in easily accessible alphabetical entries. "Paulos . . . does for mathematics what The Joy of Sex did for the boudoir. . . ."--Washington Post Book World. First time in paperback.

A Mathematician Plays The Stock Market John Allen Paulos 2003-05-02 Can a renowned mathematician successfully outwit the stock market? Not when his biggest investment is WorldCom.In A Mathematician Plays the Stock Market , best-selling author John Allen Paulos employs his trademark stories, vignettes, paradoxes, and puzzles to address every thinking reader's curiosity about the market--Is it efficient? Is it random? 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? Are there any approaches to investing that truly outperform the major indexes?But Paulos's tour through the irrational exuberance of market mathematics doesn't end there. An unrequited (and financially disastrous) love affair with WorldCom leads Paulos to question some cherished ideas of personal finance. He explains why "data mining" is a self-fulfilling belief, why "momentum investing" is nothing more than herd behavior with a lot of mathematical jargon added, why the ever-popular Elliot Wave Theory cannot be correct, and why you should take Warren Buffet's "fundamental analysis" with a grain of salt.Like Burton Malkiel's A Random Walk Down Wall Street , this clever and illuminating book is for anyone, investor or not, who follows the markets--or knows someone who does.

Mathematics and Humor John Allen Paulos 2008-08-04 John Allen Paulos cleverly scrutinizes the mathematical structures of jokes, puns, paradoxes, spoonerisms, riddles, and other forms of humor, drawing examples from such sources as Rabelais, Shakespeare, James Beattie, René Thom, Lewis Carroll, Arthur Koestler, W. C. Fields, and Woody Allen. "Jokes, paradoxes, riddles, and the art of non-sequitur are revealed with great perception and insight in this illuminating account of the relationship between humor and mathematics."—Joseph Williams, New York Times "'Leave your mind alone,' said a Thurber cartoon, and a really complete and convincing analysis of what humour is might spoil all jokes forever. This book avoids that danger. What it does. . .is describe broadly several kinds of mathematical theory and apply them to throw sidelights on how many kinds of jokes work."—New Scientist "Many scholars nowadays write seriously about the ludicrous. Some merely manage to be dull. A few—like Paulos—are brilliant in an odd endeavor."—Los Angeles Times Book Review

I Think, Therefore I Laugh John Allen Paulos 2000 - Brian Butterworth, author of What Counts: How Every Brain is Hardwired for Math.

The Survival of a Mathematician Steven George Krantz 2009-01 "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.

Technical Analysis and Stock Market Profits R. Schabacker 2005 Richard W. Schabacker's great work, Technical Analysis and Stock Market Profits, is a worthy addition to any technical analyst's personal library or any market library. His "pioneering research" represents one of the finest works ever produced on technical analysis, and this book remains an example of the highest order of analytical quality and incisive trading wisdom. Originally devised as a practical course for investors, it is as alive, vital and instructional today as the day it was written. It paved the way for Robert Edwards and John Magee's best-selling Technical Analysis of Stock Trends - a debt which is acknowledged in their foreword: 'Part One is based in large part on the pioneer researches and writings of the late Richard Schabacker.'Schabacker presents technical analysis as a totally organized subject and comprehensively lays out the various important patterns, formations, trends, support and resistance areas, and associated supporting technical detail. He presents factors that can be confidently relied on, and gives equal attention to the blemishes and weaknesses that can upset the best of analytical forecasts: Factors which investors would do well to absorb and apply when undertaking the fascinating game of price, time and volume analysis.