

Undiluted Hocus Pocus The Autobiography Of Martin Gardner

Understanding tensors is essential for any physics student dealing with phenomena where causes and effects have different directions. A horizontal electric field producing vertical polarization in dielectrics; an unbalanced car wheel wobbling in the vertical plane while spinning about a horizontal axis; an electrostatic field on Earth observed to be a magnetic field by orbiting astronauts—these are some situations where physicists employ tensors. But the true beauty of tensors lies in this fact: When coordinates are transformed from one system to another, tensors change according to the same rules as the coordinates. Tensors, therefore, allow for the convenience of coordinates while also transcending them. This makes tensors the gold standard for expressing physical relationships in physics and geometry. Undergraduate physics majors are typically introduced to tensors in special-case applications. For example, in a classical mechanics course, they meet the "inertia tensor," and in electricity and magnetism, they encounter the "polarization tensor." However, this piecemeal approach can set students up for misconceptions when they have to learn about tensors in more advanced physics and mathematics studies (e.g., while enrolled in a graduate-level general relativity course or when studying non-Euclidean geometries in a higher mathematics class). Dwight E. Neuenschwander's *Tensor Calculus for Physics* is a bottom-up approach that emphasizes motivations before providing definitions. Using a clear, step-by-step approach, the book strives to embed the logic of tensors in contexts that demonstrate why that logic is worth pursuing. It is an ideal companion for courses such as mathematical methods of physics, classical mechanics, electricity and magnetism, and relativity.

From Nobel prize-winner Roger Penrose, this groundbreaking book is for anyone "who is interested in the world, how it works, and how it got here" (New York Journal of Books). Penrose presents a new perspective on three of cosmology's essential questions: What came before the Big Bang? What is the source of order in our universe? And what cosmic future awaits us? He shows how the expected fate of our ever-accelerating and expanding universe—heat death or ultimate entropy—can actually be reinterpreted as the conditions that will begin a new "Big Bang." He details the basic principles beneath our universe, explaining various standard and non-standard cosmological models, the fundamental role of the cosmic microwave background, the paramount significance of black holes, and other basic building blocks of contemporary physics. Intellectually thrilling and widely accessible, *Cycles of Time* is a welcome new contribution to our understanding of the universe from one of our greatest mathematicians and thinkers.

The Abracadabra Hotel, built by and for magicians, has long been known to locals as the Hocus Pocus Hotel. Charlie Hitchcock has never stepped inside until Tyler Yu tells him to meet him there ...or else. As if the hotel's storied past isn't enough, it turns out that the place is inhabited by magicians, and while Charlie and Ty solve magical mysteries, the bully and the brain form an unlikely friendship.

A fundamental introduction to modern game theory from a mathematical viewpoint. Game theory arises in almost every fact of human and inhuman interaction since oftentimes during these communications objectives are opposed or cooperation is

viewed as an option. From economics and finance to biology and computer science, researchers and practitioners are often put in complex decision-making scenarios, whether they are interacting with each other or working with evolving technology and artificial intelligence. Acknowledging the role of mathematics in making logical and advantageous decisions, *Game Theory: An Introduction* uses modern software applications to create, analyze, and implement effective decision-making models. While most books on modern game theory are either too abstract or too applied, this book provides a balanced treatment of the subject that is both conceptual and hands-on. *Game Theory* introduces readers to the basic theories behind games and presents real-world examples from various fields of study such as economics, political science, military science, finance, biological science as well as general game playing. A unique feature of this book is the use of Maple to find the values and strategies of games, and in addition, it aids in the implementation of algorithms for the solution or visualization of game concepts. Maple is also utilized to facilitate a visual learning environment of game theory and acts as the primary tool for the calculation of complex non-cooperative and cooperative games. Important game theory topics are presented within the following five main areas of coverage: Two-person zero sum matrix games Nonzero sum games and the reduction to nonlinear programming Cooperative games, including discussion of both the Nucleolus concept and the Shapley value Bargaining, including threat strategies Evolutionary stable strategies and population games Although some mathematical competence is assumed, appendices are provided to act as a refresher of the basic concepts of linear algebra, probability, and statistics. Exercises are included at the end of each section along with algorithms for the solution of the games to help readers master the presented information. Also, explicit Maple and Mathematica® commands are included in the book and are available as worksheets via the book's related Website. The use of this software allows readers to solve many more advanced and interesting games without spending time on the theory of linear and nonlinear programming or performing other complex calculations. With extensive examples illustrating game theory's wide range of relevance, this classroom-tested book is ideal for game theory courses in mathematics, engineering, operations research, computer science, and economics at the upper-undergraduate level. It is also an ideal companion for anyone who is interested in the applications of game theory.

"Magical Mathematics reveals the secrets of amazing, fun-to-perform card tricks--and the profound mathematical ideas behind them--that will astound even the most accomplished magician. Persi Diaconis and Ron Graham provide easy, step-by-step instructions for each trick, explaining how to set up the effect and offering tips on what to say and do while performing it. Each card trick introduces a new mathematical idea, and varying the tricks in turn takes readers to the very threshold of today's mathematical knowledge. For example, the Gilbreath principle--a fantastic effect where the cards remain in control despite being shuffled--is found to share an intimate connection with the Mandelbrot set. Other card tricks link to the mathematical secrets of combinatorics, graph theory, number theory, topology, the Riemann hypothesis, and even Fermat's last theorem. Diaconis and Graham are mathematicians as well as skilled performers with decades of professional experience between them. In this book they share a wealth of conjuring lore, including some closely guarded secrets of legendary magicians. *Magical Mathematics* covers the mathematics of juggling and

shows how the I Ching connects to the history of probability and magic tricks both old and new. It tells the stories--and reveals the best tricks--of the eccentric and brilliant inventors of mathematical magic. *Magical Mathematics* exposes old gambling secrets through the mathematics of shuffling cards, explains the classic street-gambling scam of three-card monte, traces the history of mathematical magic back to the thirteenth century and the oldest mathematical trick--and much more"--

Addicted to the Monkey Mind offers a toolbox of practical skills to shift self-sabotaging, programmed ways of thinking. J.F. Benoit, a visionary thought leader in the fields of addiction treatment and personal development, uses the journeys of two relatable characters to teach you how to develop a powerful new mindset and finally break the cycle of debilitating habits.

Undiluted Hocus-Pocus: The Autobiography of Martin Gardner Princeton University Press "[A] ... memoir and ... polemic on how computers and algorithms shape our understanding of the world and of who we are"--

Martin Gardner wrote the *Mathematical Games* column for *Scientific American* for twenty-five years and published more than seventy books on topics as diverse as magic, religion, and *Alice in Wonderland*. Gardner's illuminating autobiography is a candid self-portrait by the man evolutionary theorist Stephen Jay Gould called our "single brightest beacon" for the defense of rationality and good science against mysticism and anti-intellectualism. Gardner takes readers from his childhood in Oklahoma to his varied and wide-ranging professional pursuits. He shares colorful anecdotes about the many fascinating people he met and mentored, and voices strong opinions on the subjects that matter to him most, from his love of mathematics to his uncompromising stance against pseudoscience. For Gardner, our mathematically structured universe is undiluted hocus-pocus—a marvelous enigma, in other words. *Undiluted Hocus-Pocus* offers a rare, intimate look at Gardner's life and work, and the experiences that shaped both.

"The Library of Babel" is arguably Jorge Luis Borges' best known story--memorialized along with Borges on an Argentine postage stamp. Now, in *The Unimaginable Mathematics of Borges' Library of Babel*, William Goldbloom Bloch takes readers on a fascinating tour of the mathematical ideas hidden within one of the classic works of modern literature. Written in the vein of Douglas R. Hofstadter's Pulitzer Prize-winning *Gödel, Escher, Bach*, this original and imaginative book sheds light on one of Borges' most complex, richly layered works. Bloch begins each chapter with a mathematical idea--combinatorics, topology, geometry, information theory--followed by examples and illustrations that put flesh on the theoretical bones. In this way, he provides many fascinating insights into Borges' Library. He explains, for instance, a straightforward way to calculate how many books are in the Library--an easily notated but literally unimaginable number--and also shows that, if each book were the size of a grain of sand, the entire universe could only hold a fraction of the books in the Library. Indeed, if each book were the size of a proton, our universe would still not be big enough to hold anywhere near all the books. Given Borges' well-known affection for mathematics, this exploration of the story through the eyes of a humanistic mathematician makes a unique and important contribution to the body of Borgesian criticism. Bloch not only illuminates one of the great short stories of modern literature but also exposes the reader--including those more inclined to the literary world--to many intriguing and entrancing mathematical ideas.

Since its introduction by Friedhelm Waldhausen in the 1970s, the algebraic K-theory of spaces has been recognized as the main tool for studying parametrized phenomena in the theory of manifolds. However, a full proof of the equivalence relating the two areas has not appeared

until now. This book presents such a proof, essentially completing Waldhausen's program from more than thirty years ago. The main result is a stable parametrized h-cobordism theorem, derived from a homotopy equivalence between a space of PL h-cobordisms on a space X and the classifying space of a category of simple maps of spaces having X as deformation retract. The smooth and topological results then follow by smoothing and triangulation theory. The proof has two main parts. The essence of the first part is a "desingularization," improving arbitrary finite simplicial sets to polyhedra. The second part compares polyhedra with PL manifolds by a thickening procedure. Many of the techniques and results developed should be useful in other connections.

This volume covers a new class of solitons, the contributions wavelets are making to solving scientific problems, how mathematics is improving medical imaging, and Andrew Wiles's work on Fermat's "Last Theorem". This work is aimed at undergraduates, graduate students and mathematics clubs.

Ursula K. Le Guin discusses her fiction, nonfiction, and poetry?both her process and her philosophy?with all the wisdom, profundity, and rigor we expect from one of the great writers of the last century. When the New York Times referred to Ursula K. Le Guin as America's greatest writer of science fiction, they just might have undersold her legacy. It's hard to look at her vast body of work?novels and stories across multiple genres, poems, translations, essays, speeches, and criticism?and see anything but one of our greatest writers, period. In a series of interviews with David Naimon (Between the Covers), Le Guin discusses craft, aesthetics, and philosophy in her fiction, poetry, and nonfiction respectively. The discussions provide ample advice and guidance for writers of every level, but also give Le Guin a chance to sound off on some of her favorite subjects: the genre wars, the patriarchy, the natural world, and what, in her opinion, makes for great writing. With excerpts from her own books and those that she looked to for inspiration, this volume is a treat for Le Guin's longtime readers, a perfect introduction for those first approaching her writing, and a tribute to her incredible life and work. Provides the history of magic and discusses the exploits of some of the world's most notorious magicians

****Kirkus Best Books of the Year (2013)**** ****Time Magazine 10 Top Nonfiction Books of 2013****

****The New Republic Best Books of 2013**** In this heart-lifting chronicle, Richard Holmes, author of the best-selling *The Age of Wonder*, follows the pioneer generation of balloon aeronauts, the daring and enigmatic men and women who risked their lives to take to the air (or fall into the sky). Why they did it, what their contemporaries thought of them, and how their flights revealed the secrets of our planet is a compelling adventure that only Holmes could tell. His accounts of the early Anglo-French balloon rivalries, the crazy firework flights of the beautiful Sophie Blanchard, the long-distance voyages of the American entrepreneur John Wise and French photographer Felix Nadar are dramatic and exhilarating. Holmes documents as well the balloons used to observe the horrors of modern battle during the Civil War (including a flight taken by George Armstrong Custer); the legendary tale of at least sixty-seven manned balloons that escaped from Paris (the first successful civilian airlift in history) during the Prussian siege of 1870-71; the high-altitude exploits of James Glaisher (who rose) seven miles above the earth without oxygen, helping to establish the new science of meteorology); and how Mary Shelley, Edgar Allan Poe, and Jules Verne felt the imaginative impact of flight and allowed it to soar in their work. A seamless fusion of history, art, science, biography, and the metaphysics of flights, *Falling Upwards* explores the interplay between technology and imagination. And through the strange allure of these great balloonists, it offers a masterly portrait of human endeavor, recklessness, and vision. (With 24 pages of color illustrations, and black-and-white illustrations throughout.)

Provides an introduction to American pulp fiction during the twentieth century with brief author biographies and lists of their works.

"A journalist travels the world and investigates current socioeconomic theories of happiness to discover why most modern cities are designed to make us miserable, what we can do to change this, and why we have more to learn from poor cities than from prosperous ones"-- Professor Picanumba has dozens of surefire tricks up his sleeve — and he's willing to show junior mathemagicians how to predict the answers to 88 word and number challenges. Includes solutions and illustrations.

To open a newspaper or turn on the television it would appear that science and religion are polar opposites - mutually exclusive bedfellows competing for hearts and minds. There is little indication of the rich interaction between religion and science throughout history, much of which continues today. From ancient to modern times, mathematicians have played a key role in this interaction. This is a book on the relationship between mathematics and religious beliefs. It aims to show that, throughout scientific history, mathematics has been used to make sense of the 'big' questions of life, and theism is rich in both culture and character. Chapters cover a fascinating range of topics including the Sect of the Pythagoreans, Newton's views on the Apocalypse, Charles Dodgson's Anglican faith and Godel's proof of the existence of God.-- The author presents a selection of pieces from his Scientific American "Mathematical Games" column, presenting puzzles and concepts that range from arithmetic and geometrical games to the meaning of M.C. Escher's artwork.

We all lose time and money because of bad decisions, perfectly happy in the illusion that our common sense is choosing the right path for us. In *Conned Again, Watson!* Sherlock Holmes uses his vast knowledge solve crimes and protect the innocent in a series of cautionary tales of greedy gamblers, reckless businessmen and ruthless conmen. From 'The Execution of Andrews' to 'The Case of the Gambling Nobleman' and 'The Case of the Paranoid Student', there has never been a more exciting way to learn when to take a calculated risk - and how to spot a scam. In this illuminating collection of twelve new Sherlock Holmes stories, challenges of logic, probability, statistics, game theory and more are illustrated. A thought-provoking introduction to maths relevant to everyday life, this book will change the way you look at making decisions.

How did species wind up where they are today? Scientists have long conjectured that plants and animals dispersed throughout the world by drifting on large landmasses as they broke up, but in *The Monkey's Voyage*, biologist Alan de Queiroz offers a radical new theory that displaces this passive view. He describes how species as diverse as monkeys, baobab trees, and burrowing lizards made incredible long-distance ocean crossings: pregnant animals and wind-blown plants rode rafts and icebergs and even stowed away on the legs of sea-going birds to create the map of life we see today. In the tradition of John McPhee's *Basin and Range* and David Quammen's *The Song of the Dodo*, *The Monkey's Voyage* is a beautifully told narrative of a profound investigation into the importance of contingency in history and the nature of scientific discovery.

Before turning to filmmaking, Francois Truffaut was a film critic writing for *Cahiers du Cinema* during the 1950s. *The Early film Criticism of Francois Truffaut* makes available, for the first time in English, articles that originally appeared in French journals such as *Cahiers du Cinema* and *Arts*. Truffaut discusses films by such acknowledged masters as Hitchcock, Huston, Dymtryk, and Lang, but also examines the work of such lesser-known directors as Robert Wise, Don Weis, and Roger Vadim.

Winner of the Commonwealth Writers' Prize for Best Book A New York Times Book Review Notable Book of the Year On a property in New South Wales, a widower named Holland lives with his daughter, Ellen. Over the years as she grows into a beautiful woman, Holland plants hundreds of different eucalyptus trees on his land, filling the landscape, making a virtual outdoor museum of trees. When Ellen is nineteen, Holland announces that she may only marry the man who can correctly name the species of each and every gum tree on his property. A

strange contest begins, and Ellen is left unmoved by her suitors until she chances on a strange young man resting under the Coolibah tree whose stories will amaze and dazzle her. A modern fairy tale, and an unforgettable love story, that bristles with spiky truths and unexpected wisdom about art, feminine beauty, landscape, and language. Eucalyptus affirms the seductive power of storytelling itself.

Amusing sequels and parodies of one of America's best-loved poems: Casey's Revenge, Why Casey Whiffed, Casey's Sister at the Bat, others.

An anthology of fifty-four essays representing nearly sixty years of work encompasses topics ranging from the mysteries of quantum physics to the question of the existence of God to the paradox of the significance of nothing

Fair, witty appraisal of cranks, quacks, and quackeries of science and pseudoscience: hollow earth, Velikovsky, orgone energy, Dianetics, flying saucers, Bridey Murphy, food and medical fads, and much more.

A comprehensive critical biography of the legendary sixteenth-century astrologer examines the allure of the man and his ideas and clarifies his many famous predictions, such as Hitler's reign of terror and Watergate

Close Up was the first English-language journal of film theory. Published between 1927 and 1933, it billed itself as "the only magazine devoted to film as an art," promising readers "theory and analysis: no gossip." The journal was edited by the writer and filmmaker Kenneth Macpherson, the novelist Winifred Bryher, and the poet H. D., and it attracted contributions from such major figures as Dorothy Richardson, Sergei Eisenstein, and Man Ray. This anthology presents some of the liveliest and most important articles from the publication's short but influential history. The writing in Close Up was theoretically astute, politically incisive, open to emerging ideas from psychoanalysis, passionately committed to "pure cinema," and deeply critical of Hollywood and its European imitators. The articles collected here cover such subjects as women and film, "The Negro in Cinema," Russian and working-class cinema, and developments in film technology, including the much debated addition of sound. The contributors are a cosmopolitan cast, reflecting the journal's commitment to internationalism; Close Up was published from Switzerland, printed in England and France, and distributed in Paris, Berlin, London, New York, and Los Angeles. The editors of this volume present a substantial introduction and commentaries on the articles that set Close Up in historical and intellectual context. This is crucial reading for anyone interested in the origins of film theory and the relationship between cinema and modernism.

"Witty, compelling, and just plain fun to read . . ." —Evelyn Lamb, *Scientific American*

The Freakonomics of math—a math-world superstar unveils the hidden beauty and logic of the world and puts its power in our hands

The math we learn in school can seem like a dull set of rules, laid down by the ancients and not to be questioned. In *How Not to Be Wrong*, Jordan Ellenberg shows us how terribly limiting this view is: Math isn't confined to abstract incidents that never occur in real life, but rather touches everything we do—the whole world is shot through with it. Math allows us to see the hidden structures underneath the messy and chaotic surface of our world. It's a science of not being wrong, hammered out by centuries of hard work and argument. Armed with the tools of mathematics, we can see through to the true meaning of information we take for granted: How early should you get to the airport? What does "public opinion" really represent? Why do tall parents have shorter children? Who really won Florida in 2000?

And how likely are you, really, to develop cancer? How Not to Be Wrong presents the surprising revelations behind all of these questions and many more, 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 chases mathematical threads through a vast range of time and space, from the everyday to the cosmic, encountering, among other things, baseball, Reaganomics, daring lottery schemes, Voltaire, the replicability crisis in psychology, Italian Renaissance painting, artificial languages, the development of non-Euclidean geometry, the coming obesity apocalypse, Antonin Scalia's views on crime and punishment, the psychology of slime molds, what Facebook can and can't figure out about you, and the existence of God. Ellenberg pulls from history as well as from the latest theoretical developments to provide those not trained in math with the knowledge they need. Math, as Ellenberg says, is “an atomic-powered prosthesis that you attach to your common sense, vastly multiplying its reach and strength.” With the tools of mathematics in hand, you can understand the world in a deeper, more meaningful way. How Not to Be Wrong will show you how.

What drove Nobel-winning physicist Hans Bethe, head of Theoretical Physics at Los Alamos during the Manhattan Project, to later renounce the weaponry he had worked so tirelessly to create? That is one of the questions answered by *Nuclear Forces*, a riveting biography of Bethe's early life and development as both a scientist and a man of principle.

A noted author defends his personal attitudes toward the fundamental issues of classical philosophy, discussing the awesome mystery surrounding science and life and explaining why he considers himself a theist

“[A] collection of Clive James's essays on a variety of literary topics . . . This is sanity, humor and acuity in the face of death” (*The Wall Street Journal*). In 2010, Clive James was diagnosed with terminal leukemia. Deciding that “if you don't know the exact moment when the lights will go out, you might as well read until they do,” James moved his library to his Cambridge house, where he would “live, read, and perhaps even write.” James is the award-winning author of dozens of works of literary criticism, poetry, and history, and this volume contains his reflections on what may well be his last reading list. A look at some of James's old favorites as well as some of his recent discoveries, this book also offers a revealing look at the author himself, sharing his evocative musings on literature and family, and on living and dying. As thoughtful and erudite as the works of Alberto Manguel, and as moving and inspiring as Randy Pausch's *The Last Lecture* and Will Schwalbe's *The End of Your Life Book Club*, this valediction to James's lifelong engagement with the written word is a captivating valentine from one of the great literary minds of our time. “These essays and poems are death-haunted but radiant with the felt experience of what it means to be alive, even when mortally sick, especially when mortally sick.” —*Financial Times* “Latest Readings is a plain demonstration that Mr. James remains as learned and as funny as any critic on earth.” —*The New York Times*

International superstar, Ricky Martin, who has sold more than 60 million albums worldwide, opens up for the first time about memories of his early childhood, experiences in the famed boy band Menudo, struggles with his identity during the *Living on My Own* phenomenon, reflections on coming to terms with his sexuality,

relationships that allowed him to embrace love, and life-changing decisions like devoting himself to helping children around the world and becoming a father. Me is an intimate memoir about the very liberating and spiritual journey of one of the most iconic pop-stars of our time.

Two years after she underwent a mastectomy and chemotherapy, Barbara Bradfield's aggressive breast cancer had recurred and spread to her lungs. The outlook was grim. Then she took part in Genentech's clinical trials for a new drug. Five years later she remains cancer-free. Her-2 is the biography of Herceptin, the drug that provoked dramatic responses in Barbara Bradfield and other women in the trials and that offers promise for hundreds of thousands of breast cancer patients. Unlike chemotherapy or radiation, Herceptin has no disabling side effects. It works by inactivating Her-2/neu--a protein that makes cancer cells grow especially quickly-- produced by a gene found in 25 to 30 percent of all breast tumors. Herceptin caused some patients' cancers to disappear completely; in others, it slowed the progression of the disease and gave the women months or years they wouldn't otherwise have had. Herceptin is the first treatment targeted at a gene defect that gives rise to cancer. It marks the beginning of a new era of treatment for all kinds of cancers. Robert Bazell presents a riveting account of how Herceptin was born. Her-2 is a story of dramatic discoveries and strong personalities, showing the combination of scientific investigation, money, politics, ego, corporate decisions, patient activism, and luck involved in moving this groundbreaking drug from the lab to a patient's bedside. Bazell's deft portraits introduce us to the remarkable people instrumental in Herceptin's history, including Dr. Dennis Slamon, the driven UCLA oncologist who played the primary role in developing the treatment; Lily Tartikoff, wife of television executive Brandon Tartikoff, who tapped into Hollywood money and glamour to help fund Slamon's research; and Marti Nelson, who inspired the activists who lobbied for a "compassionate use" program that would allow women outside the clinical trials to have access to the limited supplies of Herceptin prior to FDA approval of the drug. And throughout there are the stories of the heroic women with advanced breast cancer who volunteered for the trials, risking what time they had left on an unproven treatment. Meticulously researched, written with clarity and compassion, Her-2 is masterly reporting on cutting-edge science.

Best known as the longtime writer of the Mathematical Games column for Scientific American—which introduced generations of readers to the joys of recreational mathematics—Martin Gardner has for decades pursued a parallel career as a devastatingly effective debunker of what he once famously dubbed "fads and fallacies in the name of science." It is mainly in this latter role that he is onstage in this collection of choice essays. When You Were a Tadpole and I Was a Fish takes aim at a gallery of amusing targets, ranging from Ann Coulter's qualifications as an evolutionary biologist to the logical fallacies of precognition and extrasensory perception, from Santa Claus to The Wizard of Oz, from mutilated chessboards to the little-known "one-poem poet" Langdon Smith (the original author of this volume's title line). The writings assembled here fall naturally into seven broad categories: Science, Bogus Science, Mathematics, Logic, Literature, Religion and Philosophy, and Politics. Under each heading, Gardner displays an awesome level of erudition combined with a wicked sense of humor. LAPD detective Shane Scully and his partner Sumner Hitchens investigate a possible killer in their precinct when a trouble-making activist is found dead in her home.

Are you smarter than a Singaporean ten-year-old? Can you beat Sherlock Holmes? If you think the answer is yes - I challenge you to solve my problems. Here are 125 of the world's best brainteasers from the last two millennia, taking us from ancient China to medieval Europe, Victorian England to modern-day Japan, with stories of espionage, mathematical breakthroughs and puzzling rivalries along the way. Pit your wits against logic puzzles and kinship riddles, pangrams and river-crossing conundrums. Some solutions rely on a touch of cunning, others call for creativity, others need mercilessly logical thought. Some can only be solved by 2 per cent of the population. All are guaranteed to sharpen your mind. Let's get puzzling!

Famed puzzle expert explains math behind a multitude of mystifying tricks: card tricks, stage "mind reading," coin and match tricks, counting out games, geometric dissections, etc. More than 400 tricks. 135 illustrations.

Martin Gardner's Mathematical Games columns in Scientific American inspired and entertained several generations of mathematicians and scientists. Gardner in his crystal-clear prose illuminated corners of mathematics, especially recreational mathematics, that most people had no idea existed. His playful spirit and inquisitive nature invite the reader into an exploration of beautiful mathematical ideas along with him. These columns were both a revelation and a gift when he wrote them; no one--before Gardner--had written about mathematics like this. They continue to be a marvel. This volume, first published in 1975, contains columns published in the magazine from 1965-1967. This 1989 MAA edition contains a foreword by John H. Conway and a postscript and extended bibliography added by Gardner for this edition.

In this sequel to *The Scientist as Rebel* (2006), Freeman Dyson—whom *The Times of London* calls “one of the world’s most original minds”—celebrates openness to unconventional ideas and “the spirit of joyful dreaming” in which he believes that science should be pursued.

Throughout these essays, which range from the creation of the Royal Society in the seventeenth century to the scientific inquiries of the Romantic generation to recent books by Daniel Kahneman and Malcolm Gladwell, he seeks to “break down the barriers that separate science from other sources of human wisdom.” Dyson discusses twentieth-century giants of physics such as Richard Feynman, J. Robert Oppenheimer, Paul Dirac, and Steven Weinberg, many of whom he knew personally, as well as Winston Churchill’s pursuit of nuclear weapons for Britain and Wernher von Braun’s pursuit of rockets for space travel. And he takes a provocative, often politically incorrect approach to some of today’s most controversial scientific issues: global warming, the current calculations of which he thinks are probably wrong; the future of biotechnology, which he expects to dominate our lives in the next half-century as the tools to design new living creatures become available to everyone; and the flood of information in the digital age. Dyson offers fresh perspectives on the history, the philosophy, and the practice of scientific inquiry—and even on the blunders, the wild guesses and wrong theories that are also part of our struggle to understand the wonders of the natural world.

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