

## Professor Stewarts Cabinet Of Mathematical Curiosities

Flatterland Bridging the Gap to University Mathematics Light The Number Mysteries The Simpsons and Their Mathematical Secrets Significant Figures Is God a Mathematician? Symmetry: A Very Short Introduction The Great Equations: Breakthroughs in Science from Pythagoras to Heisenberg Professor Stewart's Cabinet of Mathematical Curiosities Professor Stewart's Hoard of Mathematical Treasures Professor Stewart's Incredible Numbers Five Equations That Changed the World The Foundations of Mathematics Crashes, Crises, and Calamities Professor Stewart's Casebook of Mathematical Mysteries Math Hysteria : Fun and games with mathematics Nature's Numbers A Cabinet of Philosophical Curiosities Mathematics Of Life The Perfect Swarm The Remarkable Lives of Numbers How to Cut a Cake Taming the Infinite The Magic of Math What Shape is a Snowflake? The Magical Maze Why Beauty Is Truth How to Ace Calculus The Great Mathematical Problems Professor Stewart's Cabinet of Mathematical Curiosities Professor Stewart's Cabinet of Mathematical Curiosities Professor Stewart's Hoard of Mathematical Treasures Thinking In Numbers Cows in the Maze The Beauty of Numbers in Nature Seventeen Equations that Changed the World Do Dice Play God? Mathematical Mysteries Professor Stewart's Cabinet of Mathematical Curiosities

### Flatterland

A Publishers Weekly best book of 1995! Dr. Michael Guillen, known to millions as the science editor of ABC's Good Morning America, tells the fascinating stories behind five mathematical equations. As a regular contributor to daytime's most popular morning news show and an instructor at Harvard University, Dr. Michael Guillen has earned the respect of millions as a clear and entertaining guide to the exhilarating world of science and mathematics. Now Dr. Guillen unravels the equations that have led to the inventions and events that characterize the modern world, one of which -- Albert Einstein's famous energy equation,  $E=mc^2$  -- enabled the creation of the nuclear bomb. Also revealed are the mathematical foundations for the moon landing, airplane travel, the electric generator -- and even life itself. Praised by Publishers Weekly as "a wholly accessible, beautifully written exploration of the potent mathematical imagination," and named a Best Nonfiction Book of 1995, the stories behind The Five Equations That Changed the World, as told by Dr. Guillen, are not only chronicles of science, but also gripping dramas of jealousy, fame, war, and discovery.

### Bridging the Gap to University Mathematics

"There are many textbooks available for a so-called transition course from calculus to abstract mathematics. I have taught this course several times and always find it problematic. The Foundations of Mathematics (Stewart and Tall) is a horse of a different color. The writing is excellent and there is actually some useful mathematics. I definitely like this book."--The Bulletin of Mathematics Books

## **Light**

A visual exploration of the power and behavior of light, across the electromagnetic spectrum, and how it affects life on earth and everything in the Universe. Light allows us to see everything around us, but humans can only see a sliver of all light, known as the electromagnetic spectrum. Here, Kim Arcand and Megan Watzke present the subject of light as never before. Organized along the order of the electromagnetic spectrum, each chapter focuses on a different type of light. From radio waves, harnessed for telecommunications, to X-rays, which let us peer inside the human body and view areas around black holes in deep space, Arcand and Watzke show us all the important ways light impacts us. An introductory chapter describes what light is and how it behaves, while hundreds of full-color photographs and illustrations demonstrate concepts and make for a stunning book that's a joy to read and browse.

## **The Number Mysteries**

Approaches mathematics using an assortment of puzzles and problems and the metaphorical structure of a maze.

## **The Simpsons and Their Mathematical Secrets**

Following on the success of his books *Math Hysteria* and *How to Cut a Cake*, Ian Stewart is back with more stories and puzzles that are as quirky as they are fascinating, and each from the cutting edge of the world of mathematics. From the math of mazes, to cones with a twist, and the amazing sphericon--and how to make one--*Cows in the Maze* takes readers on an exhilarating tour of the world of mathematics. We find out about the mathematics of time travel, explore the shape of teardrops (which are not tear-drop shaped, but something much, much more strange), dance with dodecahedra, and play the game of Hex, among many more strange and delightful mathematical diversions. In the title essay, Stewart introduces readers to Robert Abbott's mind-bending "Where Are the Cows?" maze, which changes every time you pass through it, and is said to be the most difficult maze ever invented. In addition, he shows how a 90-year old woman and a computer scientist cracked a long-standing question about counting magic squares, describes the mathematical patterns in animal movement (walk, trot, gallop), looks at a fusion of art, mathematics, and the physics of sand piles, and reveals how mathematicians can--and do--prove a negative. Populated by amazing creatures, strange characters, and astonishing mathematics explained in an accessible and fun way, and illustrated with quirky cartoons by artist Spike Gerrell, *Cows in the Maze* will delight everyone who loves mathematics, puzzles and mathematical conundrums.

## **Significant Figures**

Symmetry is an immensely important concept in mathematics and throughout the sciences. In this Very Short Introduction, Ian Stewart highlights the deep implications of symmetry and its important scientific applications across the entire subject.

## **Is God a Mathematician?**

Every time we download music, take a flight across the Atlantic or talk on our cell phones, we are relying on great mathematical inventions. In *The Number Mysteries*, one of our generation's foremost mathematicians Marcus du Sautoy offers a playful and accessible examination of numbers and how, despite efforts of the greatest minds, the most fundamental puzzles of nature remain unsolved. Du Sautoy tells about the quest to predict the future—from the flight of asteroids to an impending storm, from bending a ball like Beckham to forecasting population growth. He brings to life the beauty behind five mathematical puzzles that have contributed to our understanding of the world around us and have helped develop the technology to cope with it. With loads of games to play and puzzles to solve, this is a math book for everyone.

## **Symmetry: A Very Short Introduction**

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

## **The Great Equations: Breakthroughs in Science from Pythagoras to Heisenberg**

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 that 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 to 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.

## **Professor Stewart's Cabinet of Mathematical Curiosities**

Welcome back to Ian Stewart's magical world of mathematics! This is a strange world of never-ending chess games, empires on the moon, furious fireflies, and, of course, disputes over how best to cut a cake. Each quirky tale presents a fascinating mathematical puzzle — challenging, fun, and also introducing the reader to a significant mathematical problem in an engaging and witty way.

## **Professor Stewart's Hoard of Mathematical Treasures**

Bestselling author and astrophysicist Mario Livio examines the lives and theories of history's greatest mathematicians to ask how—if mathematics is an abstract construction of the human mind—it can so perfectly explain the physical world. Nobel Laureate Eugene Wigner once wondered about “the unreasonable effectiveness of mathematics” in the formulation of the laws of nature. Is God a Mathematician? investigates why mathematics is as powerful as it is. From ancient times to the present, scientists and philosophers have marveled at how such a seemingly abstract discipline could so perfectly explain the natural world. More than that—mathematics has often made predictions, for example, about subatomic particles or cosmic phenomena that were unknown at the time, but later were proven to be true. Is mathematics ultimately invented or discovered? If, as Einstein insisted, mathematics is “a product of human thought that is independent of experience,” how can it so accurately describe and even predict the world around us? Physicist and author Mario Livio brilliantly explores mathematical ideas from Pythagoras to the present day as he shows us how intriguing questions and ingenious answers have led to ever deeper insights into our world. This fascinating book will interest anyone curious about the human mind, the scientific world, and the relationship between them.

## **Professor Stewart's Incredible Numbers**

You may have watched hundreds of episodes of The Simpsons (and its sister show Futurama) without ever realising that they contain enough maths to form an entire university course. In The Simpsons and Their Mathematical Secrets, Simon Singh explains how the brilliant writers, some of the mathematicians, have smuggled in mathematical jokes throughout the cartoon's twenty-five year history, exploring everything from Mersenne primes, from Euler's equation to the unsolved riddle of P vs. NP, from perfect numbers to narcissistic numbers, and much more. With wit, clarity and a true fan's zeal, Singh analyses such memorable episodes as 'Bart the Genius' and 'Homer3' to offer an entirely new insight into the most successful show in television history.

## **Five Equations That Changed the World**

School maths is not the interesting part. The real fun is elsewhere. Like a magpie, Ian Stewart has collected the most enlightening, entertaining and vexing 'curiosities' of maths over the years. Now, the private collection is displayed in his cabinet. There are some hidden gems of logic, geometry and probability -- like how to extract a cherry from a cocktail glass (harder than you think), a pop up dodecahedron, the real reason why you can't divide anything by zero and some tips for making money by proving the obvious. Scattered among these are keys to unlocking the mysteries of Fermat's last theorem, the Poincaré Conjecture, chaos theory, and the P/NP problem for which a million dollar prize is on offer. There are beguiling secrets about familiar names like Pythagoras or prime numbers, as well as anecdotes about great mathematicians. Pull out the drawers of the Professor's cabinet and who knows what could happen

## **The Foundations of Mathematics**

Written by three gifted-and funny-teachers, How to Ace Calculus provides humorous and readable explanations of the key topics of calculus without the technical details and fine print that would be found in a more formal text. Capturing the tone of students exchanging ideas among themselves, this unique guide also explains how calculus is taught, how to get the best teachers, what to study, and what is likely to be on exams-all the tricks of the trade that will make learning the material of first-semester calculus a piece of cake. Funny, irreverent, and flexible, How to Ace Calculus shows why learning calculus can be not only a mind-expanding experience but also fantastic fun.

## **Crashes, Crises, and Calamities**

Did you know there are 17 possible types of symmetric wallpaper pattern? Do you know what 'casting out the nines' is? Or why 88 is the fourth 'untouchable' number? Or how 7 is used to test for the onset of dementia. Number fanatic Derrick Niederman has a mission to bring numbers to life. He explores the unique properties of the most exciting numbers from 1 to 200, wherever they may crop up: from mathematics to sport, from history to the natural world, from language to pop culture. Packed with illustrations, amusing facts, puzzles, brainteasers and anecdotes, this is an enthralling and thought-provoking numerical voyage through the history of mathematics, investigating problems of logic, geometry and arithmetic along the way. **\*\*\*PRAISE FOR THE REMARKABLE LIVES OF NUMBERS\*\*\*** 'A hugely entertaining pick-and-mix of history, culture and mathematical puzzles.' BBC Focus 'This book is a complete joy. It made me smile. A lot.' Carol Vorderman 'Entertaining and engaging Once you start reading it's just like the number system itself - impossible to stop.' Ian Stewart 'A fun book definitely challenging.' Vanity Fair 'All sorts of fascinating mathematical minutiae.' Time Out

## **Professor Stewart's Casebook of Mathematical Mysteries**

A new partnership of biologists and mathematicians is picking apart the hidden complexity of animals and plants to throw fresh light on the behaviour of entire organisms, how they interact and how changes in biological diversity affect the planet's ecological balance. Mathematics offers new and sometimes startling perspectives on evolution and how patterns of inheritance and population work out over time-scales ranging from millions to hundreds of years - as well as what's going on to change us right now. Ian Stewart, in characteristically clear and entertaining fashion, explores these and a whole range of pertinent issues, including how far genes control behaviour and the nature of life itself. He shows how far mathematicians and biologists are succeeding in tackling some of the most difficult scientific problems the human race has ever confronted and where their research is currently taking us.

## **Math Hysteria : Fun and games with mathematics**

The world's greatest mental mathematical magician takes us on a spellbinding journey through the wonders of numbers (and more) "Arthur Benjamin . . . joyfully

shows you how to make nature's numbers dance." -- Bill Nye (the science guy) The Magic of Math is the math book you wish you had in school. Using a delightful assortment of examples-from ice-cream scoops and poker hands to measuring mountains and making magic squares-this book revels in key mathematical fields including arithmetic, algebra, geometry, and calculus, plus Fibonacci numbers, infinity, and, of course, mathematical magic tricks. Known throughout the world as the "mathemagician," Arthur Benjamin mixes mathematics and magic to make the subject fun, attractive, and easy to understand for math fan and math-phobic alike. "A positively joyful exploration of mathematics." -- Publishers Weekly, starred review "Each [trick] is more dazzling than the last." -- Physics World

## **Nature's Numbers**

School maths is not the interesting part. The real fun is elsewhere. Like a magpie, Ian Stewart has collected the most enlightening, entertaining and vexing 'curiosities' of maths over the years. Now, the private collection is displayed in his cabinet. There are some hidden gems of logic, geometry and probability -- like how to extract a cherry from a cocktail glass (harder than you think), a pop up dodecahedron, the real reason why you can't divide anything by zero and some tips for making money by proving the obvious. Scattered among these are keys to unlocking the mysteries of Fermat's last theorem, the Poincaré Conjecture, chaos theory, and the P/NP problem for which a million dollar prize is on offer. There are beguiling secrets about familiar names like Pythagoras or prime numbers, as well as anecdotes about great mathematicians. Pull out the drawers of the Professor's cabinet and who knows what could happen

## **A Cabinet of Philosophical Curiosities**

There are some mathematical problems whose significance goes beyond the ordinary - like Fermat's Last Theorem or Goldbach's Conjecture - they are the enigmas which define mathematics. The Great Mathematical Problems explains why these problems exist, why they matter, what drives mathematicians to incredible lengths to solve them and where they stand in the context of mathematics and science as a whole. It contains solved problems - like the Poincaré Conjecture, cracked by the eccentric genius Grigori Perelman, who refused academic honours and a million-dollar prize for his work, and ones which, like the Riemann Hypothesis, remain baffling after centuries. Stewart is the guide to this mysterious and exciting world, showing how modern mathematicians constantly rise to the challenges set by their predecessors, as the great mathematical problems of the past succumb to the new techniques and ideas of the present.

## **Mathematics Of Life**

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.

## **The Perfect Swarm**

Knowing that the most exciting math is not taught in school, Professor Ian Stewart has spent years filling his cabinet with intriguing mathematical games, puzzles, stories, and factoids intended for the adventurous mind. This book reveals the most exhilarating oddities from Professor Stewart's legendary cabinet. Inside, you will find hidden gems of logic, geometry, and probability—like how to extract a cherry from a cocktail glass (harder than you think), a pop-up dodecahedron, and the real reason why you can't divide anything by zero. Scattered among these are keys to Fermat's last theorem, the Poincaré conjecture, chaos theory, and the P=NP problem (you'll win a million dollars if you solve it). You never know what enigmas you'll find in the Stewart cabinet, but they're sure to be clever, mind-expanding, and delightfully fun.

## **The Remarkable Lives of Numbers**

Why do certain civilizations, societies, and ecosystems collapse? How does the domino effect relate to the credit crunch? When can mathematics help explain marriage? And how on earth do toads predict earthquakes? The future is uncertain. But science can help foretell what lies ahead. Drawing on ecology and biology, math and physics, Crashes, Crises, and Calamities offers four fundamental tools that scientists and engineers use to forecast the likelihood of sudden change: stability, catastrophe, complexity, and game theories. In accessible prose, Len Fisher demonstrates how we can foresee and manage events that might otherwise catch us by surprise. At the cutting edge of science, Fisher helps us find ways to act before a full-fledged catastrophe is upon us. Crashes, Crises, and Calamities is a witty and informative exploration of the chaos, complexity, and patterns of our daily lives.

## **How to Cut a Cake**

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

entertainment will stimulate, delight, and enthrall.

## **Taming the Infinite**

Helps to ease the transition between school/college and university mathematics by (re)introducing readers to a range of topics that they will meet in the first year of a degree course in the mathematical sciences, refreshing their knowledge of basic techniques and focussing on areas that are often perceived as the most challenging. Each chapter starts with a "Test Yourself" section so that readers can monitor their progress and readily identify areas where their understanding is incomplete. A range of exercises, complete with full solutions, makes the book ideal for self-study.

## **The Magic of Math**

Will you answer this question in the same way that you will answer my next question? Done? Good! Will you buy this book?. Inside you will discover that your only truthful answer to this second question is affirmative. Logic has made some men rich. Inside this book you will learn of John Eck (who debated Luther in 1519). He Will you answer this question in the same way that you will answer my next question? Done? Good! Will you buy this book? Inside you will discover that your only truthful answer to this second question is affirmative. A Cabinet of Philosophical Curiosities is a colorful collection of puzzles and paradoxes, both historical and contemporary, by philosopher Roy Sorensen. Taking inspiration from Ian Stewart's Professor Stewart's Cabinet of Mathematical Curiosities, which assembled interesting "maths" from outside the classroom into a miscellany of marvels, these puzzles are ready to be enjoyed independently but gain mutual support when read in clusters. The volume ranges from simple examples to anomalous anomalies, considers data that seems to confirm a generalization while lowering its probability, and argues that we are doomed to believe infinitely many contradictions-and that the pain of contradictions can be profoundly stimulating. Inside this book you will learn of John Eck, who debated Luther in 1519. He devised a sequence of contracts that sidestepped usury laws, and German bankers made a fortune from this Triple Contract. Sorensen also recounts how Voltaire set himself up for life by exploiting a fallacy in the construction of a Parisian lottery. There is logic for altruists, too. You will discover how General Benjamin Butler used other-centric reasoning to protect runaway slaves. There are historical snapshots of logic in action, and the book contains tributes to Lewis Carroll, Arthur Prior, and Peter Geach. In addition to short essays, there are dialogues, cures and insults.

## **What Shape is a Snowflake?**

Opening another drawer in his Cabinet of Curiosities, renowned mathematics professor Ian Stewart presents a new medley of games, paradoxes, and riddles in Professor Stewart's Hoard of Mathematical Treasures. With wit and aplomb, Stewart mingles casual puzzles with grander forays into ancient and modern mathematical thought. Amongst a host of arcane and astonishing facts about every kind of number from irrational and imaginary to complex and cuneiform, we

learn: – How to organize chaos – How matter balances anti-matter – How to turn a sphere inside out (without creasing it) – How to calculate pi by observing the stars – and why you can't comb a hairy ball. Along the way Stewart offers the reader tantalizing glimpses of the mathematics underlying life and the universe. Mind-stretching, enlightening, and endlessly amusing, Professor Stewart's Hoard of Mathematical Treasures will stimulate, delight, and enthrall.

## **The Magical Maze**

The IgNobel Prize-winner and author of *Rock, Paper, Scissors* applies science-based solutions to seemingly complex problems in life.

## **Why Beauty Is Truth**

From ancient Babylon to the last great unsolved problems, Ian Stewart brings us his definitive history of mathematics. In his famous straightforward style, Professor Stewart explains each major development--from the first number systems to chaos theory--and considers how each affected society and changed everyday life forever. Maintaining a personal touch, he introduces all of the outstanding mathematicians of history, from the key Babylonians, Greeks and Egyptians, via Newton and Descartes, to Fermat, Babbage and Godel, and demystifies math's key concepts without recourse to complicated formulae. Written to provide a captivating historic narrative for the non-mathematician, *Taming the Infinite* is packed with fascinating nuggets and quirky asides, and contains 100 illustrations and diagrams to illuminate and aid understanding of a subject many dread, but which has made our world what it is today.

## **How to Ace Calculus**

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!

## **The Great Mathematical Problems**

Ian Stewart explores the astonishing properties of numbers from 1 to 10 to zero and infinity, including one figure that, if you wrote it out, would span the universe. He looks at every kind of number you can think of -- real, imaginary, rational, irrational, positive and negative -- along with several you might have thought you couldn't think of. He explains the insights of the ancient mathematicians, shows how numbers have evolved through the ages, and reveals the way numerical theory enables everyday life. Under Professor Stewart's guidance you will discover the mathematics of codes, Sudoku, Rubik's Cube, music, primes and pi. You may be surprised to find you live in eleven-dimensional space, that of the twenty-three people on a football pitch two are more likely than not to share the same birthday, and that forty-two is a very interesting number. Professor Stewart's *Incredible*

Numbers will delight everyone who loves numbers -- including those who currently think they don't.

## **Professor Stewart's Cabinet of Mathematical Curiosities**

Physics.

## **Professor Stewart's Cabinet of Mathematical Curiosities**

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, Flatland 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.

## **Professor Stewart's Hoard of Mathematical Treasures**

The irresistibly engaging book that "enlarges one's wonder at Tammet's mind and his all-embracing vision of the world as grounded in numbers." --Oliver Sacks, MD THINKING IN NUMBERS is the book that Daniel Tammet, mathematical savant and bestselling author, was born to write. In Tammet's world, numbers are beautiful and mathematics illuminates our lives and minds. Using anecdotes, everyday examples, and ruminations on history, literature, and more, Tammet allows us to share his unique insights and delight in the way numbers, fractions, and equations underpin all our lives. Inspired variously by the complexity of snowflakes, Anne Boleyn's eleven fingers, and his many siblings, Tammet explores questions such as why time seems to speed up as we age, whether there is such a thing as an average person, and how we can make sense of those we love. His provocative and inspiring new book will change the way you think about math and fire your imagination to view the world with fresh eyes.

## **Thinking In Numbers**

A meditation on the beauty and meaning of numbers, exploring mathematical equations, describing some of the mathematical discoveries of the past millennia, and pondering philosophical questions about the relation of numbers to the universe.

## **Cows in the Maze**

Knowing that the most exciting math is not taught in school, Professor Ian Stewart has spent years filling his cabinet with intriguing mathematical games, puzzles,

stories, and factoids intended for the adventurous mind. This book reveals the most exhilarating oddities from Professor Stewart's legendary cabinet. Inside, you will find hidden gems of logic, geometry, and probability-like how to extract a cherry from a cocktail glass (harder than you think), a pop-up dodecahedron, and the real reason why you can't divide anything by zero. Scattered among these are keys to Fermat's last theorem, the Poincaré conjecture, chaos theory, and the P=NP problem (you'll win a million dollars if you solve it). You never know what enigmas you'll find in the Stewart cabinet, but they're sure to be clever, mind-expanding, and delightfully fun.

## **The Beauty of Numbers in Nature**

From Newton's Law of Gravity to the Black-Scholes model used by bankers to predict the markets, equations, are everywhere -- and they are fundamental to everyday life. *Seventeen Equations that Changed the World* examines seventeen ground-breaking equations that have altered the course of human history. He explores how Pythagoras's Theorem led to GPS and Satnav; how logarithms are applied in architecture; why imaginary numbers were important in the development of the digital camera, and what is really going on with Schrdinger's cat. Entertaining, surprising and vastly informative, *Seventeen Equations that Changed the World* is a highly original exploration -- and explanation -- of life on earth.

## **Seventeen Equations that Changed the World**

Shares behind-the-scenes stories for ten of the most significant equations in human history, covering a range of topics, from Feynman's statement about Maxwell's pivotal electromagnetic equations and the influence of Newton's law of gravitation to the reason Euler's formula has been called "God's equation" and Heisenberg's uncertainty principle. 20,000 first printing.

## **Do Dice Play God?**

Think of a zebra's stripes, the complexities of a spider's web, the uniformity of desert dunes, or the spirals in a sunflower head think of a snowflake. *The Beauty of Numbers in Nature* shows how life on Earth forms the principles of mathematics. Starting with the simplest patterns, each chapter looks at a different kind of patterning system and the mathematics that underlies it. In doing so the book also uncovers some universal patterns, both in nature and man-made, from the basic geometry of ancient Greece to the visually startling fractals that we are familiar with today. Elegantly illustrated, *The Beauty of Numbers in Nature* is an illuminating and engaging vision of how the apparently cold laws of mathematics find expression in the beauty of nature.

## **Mathematical Mysteries**

An enlightening vision of how the laws of mathematics find organic expression in the beauty and patterns of nature, written by an acclaimed mathematician and science writer.

## **Professor Stewart's Cabinet of Mathematical Curiosities**

In Professor Stewart's Casebook of Mathematical Mysteries, acclaimed mathematician Ian Stewart presents an enticing collection of mathematical curios and conundrums. With a new puzzle on each page, this compendium of brainteasers will both teach and delight. Guided by stalwart detective Hemlock Soames and his sidekick, Dr. John Watsup, readers will delve into almost two hundred mathematical problems, puzzles, and facts. Tackling subjects from mathematical dates (such as Pi Day), what we don't know about primes, and why the Earth is round, this clever, mind-expanding book demonstrates the power and fun inherent in mathematics.

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