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Prime Obsession: Bernhard Riemann and the Greatest ... Bernhard Riemann was an underdog of sorts, a malnourished son of a parson who grew up to be the author of one of mathematics' greatest problems. In Prime Obsession, John Derbyshire deals brilliantly with both Riemann's life and that problem: proof of the conjecture, "All non-trivial zeros of the zeta function have real part one-half." Though the statement itself passes as nonsense to anyone but a mathematician, Derbyshire walks readers through the decades of reasoning that led to the Riemann ...

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**Unsolved Problem in Mathematics.** In 1859, Bernhard Riemann, a little-known thirty-two year old mathematician, made a hypothesis while presenting a paper to the Berlin Academy titled *On the Number of Prime Numbers Less Than a Given Quantity*. Today, after 150 years of careful research and exhaustive study, the Riemann Hypothesis remains unsolved, with a one-million-dollar prize earmarked for the first.

**Prime Obsession: Bernhard Riemann and the Greatest ...**  
**Prime Obsession: Bernhard Riemann and the Greatest Unsolved Problem in Mathematics (2003)** is a historical book on mathematics by John Derbyshire, detailing the history of the Riemann hypothesis, named for Bernhard Riemann, and some of its applications. The book was awarded the Mathematical Association of America's inaugural Euler Book Prize in 2007.

**Prime Obsession - Wikipedia**

In August 1859 Bernhard Riemann, a little-known 32-year old mathematician, presented a paper to the Berlin Academy titled: "On the Number of Prime Numbers Less Than a Given Quantity." In the middle of that paper, Riemann made an incidental remark - a guess, a hypothesis.

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**Prime Obsession: Bernhard Riemann and the Greatest ...**  
Riemann is, of course, the central focus of the book. We know relatively little about Riemann's personality; the

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Principal source is a short memoir written by Dedekind, ten years after Riemann's death. He was an extremely shy man whose only ties were with his family and other mathematicians. His health was never good, and he died at the age of 40.

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Prime Obsession: Bernhard Riemann and the Greatest ...

Prime obsession : Bernhard Riemann and the greatest unsolved problem in mathematics by Derbyshire, John. Publication date 2003 Topics Riemann, Bernhard, 1826-1866, Numbers, Prime, Series Publisher Washington, DC : Joseph Henry Press Collection inlibrary; printdisabled; internetarchivebooks; china Digitizing sponsor

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Riemann's life and that problem: proof of the conjecture, "All non-trivial zeros of the zeta function have real part one-half."

Prime Obsession: Bernhard Riemann and the Greatest ...  
In 1859, the brilliant thirty-three year old Bernard Riemann, while giving a paper on sequencing numbers, alluded to there being a predictable sequence of prime numbers, but his paper was on a different topic, and he did not elaborate.

Prime Obsession (book) by Maurice A. Williams on AuthorsDen  
Derbyshire's book Prime Obsession: Bernhard Riemann and the Greatest Unsolved Problem in Mathematics was first published in hardcover in 2003 and then paperback in 2004. It focuses on the Riemann hypothesis, one of the Millennium Problems.

John Derbyshire - Wikipedia  
Bernhard Riemann was an underdog of sorts, a malnourished son of a parson who grew up to be the author of one of mathematics' greatest problems. In Prime Obsession, John Derbyshire deals brilliantly with both Riemann's life and that problem: proof of the conjecture, "All non-trivial zeros of the zeta function have real part one-half."

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## Prime Suspects - The New York Times

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In August 1859 Bernhard Riemann, a little-known 32-year old mathematician, presented a paper to the Berlin Academy titled: "On the Number of Prime Numbers Less Than a Given Quantity." In the middle of that paper, Riemann made an incidental remark — a guess, a hypothesis. What he tossed out to the assembled mathematicians that day has proven to be almost cruelly compelling to countless scholars in the ensuing years. Today, after 150 years of careful research and exhaustive study, the question remains. Is the hypothesis true or false? Riemann's basic inquiry, the primary topic of his paper, concerned a straightforward but nevertheless important matter of arithmetic — defining a precise formula to track and identify the occurrence of prime numbers. But it is that incidental remark — the Riemann Hypothesis — that is the truly astonishing legacy of his 1859 paper. Because Riemann was able to see beyond the pattern of the primes to discern traces of something mysterious and mathematically elegant shrouded in the shadows — subtle variations in the distribution of those prime numbers. Brilliant for its clarity, astounding for its potential consequences, the Hypothesis took on enormous importance in mathematics. Indeed, the successful solution to this puzzle would herald a revolution in prime number theory. Proving or disproving it became the greatest

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challenge of the age. It has become clear that the Riemann Hypothesis, whose resolution seems to hang tantalizingly just beyond our grasp, holds the key to a variety of scientific and mathematical investigations. The making and breaking of modern codes, which depend on the properties of the prime numbers, have roots in the Hypothesis. In a series of extraordinary developments during the 1970s, it emerged that even the physics of the atomic nucleus is connected in ways not yet fully understood to this strange conundrum. Hunting down the solution to the Riemann Hypothesis has become an obsession for many — the veritable "great white whale" of mathematical research. Yet despite determined efforts by generations of mathematicians, the Riemann Hypothesis defies resolution. Alternating passages of extraordinarily lucid mathematical exposition with chapters of elegantly composed biography and history, Prime Obsession is a fascinating and fluent account of an epic mathematical mystery that continues to challenge and excite the world. Posited a century and a half ago, the Riemann Hypothesis is an intellectual feast for the cognoscenti and the curious alike. Not just a story of numbers and calculations, Prime Obsession is the engrossing tale of a relentless hunt for an elusive proof — and those who have been consumed by it.

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For 150 years the Riemann hypothesis has been the holy grail of mathematics. Now, at a moment when mathematicians are finally moving in on a proof, Dartmouth professor Dan Rockmore tells the riveting history of the hunt for a solution. In 1859 German professor Bernhard Riemann postulated a law capable of describing with an amazing degree of accuracy the occurrence of the prime numbers. Rockmore takes us all the way from Euclid to the mysteries of quantum chaos to show how the Riemann hypothesis lies at the very heart of some of the most cutting-edge research going on today in physics and mathematics.

Prime Obsession taught us not to be afraid to put the math in a math book. Unknown Quantity heeds the lesson well. So grab your graphing calculators, slip out the slide rules, and buckle up! John Derbyshire is introducing us to algebra through the ages-and it promises to be just what his die-hard fans have been waiting for. "Here is the story of algebra." With this deceptively simple introduction, we begin our journey. Flanked by formulae, shadowed by roots and radicals, escorted by an expert who navigates unerringly on our behalf, we are guaranteed safe passage through even the most treacherous mathematical terrain. Our first encounter with algebraic arithmetic takes us back 38 centuries to the time of Abraham and Isaac, Jacob and Joseph, Ur and Haran, Sodom and Gomorrah. Moving deftly from Abel's proof to the higher levels of abstraction

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Developed by Galois, we are eventually introduced to what algebraists have been focusing on during the last century. As we travel through the ages, it becomes apparent that the invention of algebra was more than the start of a specific discipline of mathematics-it was also the birth of a new way of thinking that clarified both basic numeric concepts as well as our perception of the world around us. Algebraists broke new ground when they discarded the simple search for solutions to equations and concentrated instead on abstract groups. This dramatic shift in thinking revolutionized mathematics. Written for those among us who are unencumbered by a fear of formulae, *Unknown Quantity* delivers on its promise to present a history of algebra. Astonishing in its bold presentation of the math and graced with narrative authority, our journey through the world of algebra is at once intellectually satisfying and pleasantly challenging.

This book introduces prime numbers and explains the famous unsolved Riemann hypothesis.

Originally published in 1934, this volume presents the theory of the distribution of the prime numbers in the series of natural numbers. Despite being long out of print, it remains unsurpassed as an introduction to the field.

This text covers exponential integrals and sums, 4th power moment, zero-free region, mean value estimates over short intervals, higher power moments, omega results, zeros on the critical line, zero-density estimates, and more. 1985 edition.

Like masterpieces of art, music, and literature, great mathematical theorems are creative milestones, works of

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genius destined to last forever. Now William Dunham gives them the attention they deserve. Dunham places each theorem within its historical context and explores the very human and often turbulent life of the creator -- from Archimedes, the absentminded theoretician whose absorption in his work often precluded eating or bathing, to Gerolamo Cardano, the sixteenth-century mathematician whose accomplishments flourished despite a bizarre array of misadventures, to the paranoid genius of modern times, Georg Cantor. He also provides step-by-step proofs for the theorems, each easily accessible to readers with no more than a knowledge of high school mathematics. A rare combination of the historical, biographical, and mathematical, *Journey Through Genius* is a fascinating introduction to a neglected field of human creativity. "It is mathematics presented as a series of works of art; a fascinating lingering over individual examples of ingenuity and insight. It is mathematics by lightning flash." --Isaac Asimov

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

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The Riemann Hypothesis has become the Holy Grail of mathematics in the century and a half since 1859 when Bernhard Riemann, one of the extraordinary mathematical talents of the 19th century, originally posed the problem. While the problem is notoriously difficult, and complicated even to state carefully, it can be loosely formulated as "the number of integers with an even number of prime factors is the same as the number of integers with an odd number of prime factors." The Hypothesis makes a very precise connection between two seemingly unrelated mathematical objects, namely prime numbers and the zeros of analytic functions. If solved, it would give us profound insight into number theory and, in particular, the nature of prime numbers. This book is an introduction to the theory surrounding the Riemann Hypothesis. Part I serves as a compendium of known results and as a primer for the material presented in the 20 original papers contained in Part II. The original papers place the material into historical context and illustrate the motivations for research on and around the Riemann Hypothesis. Several of these papers focus on computation of the zeta function, while others give proofs of the Prime Number Theorem, since the Prime Number Theorem is so closely connected to the Riemann Hypothesis. The text is suitable for a graduate course or seminar or simply as a reference for anyone interested in this extraordinary conjecture.

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