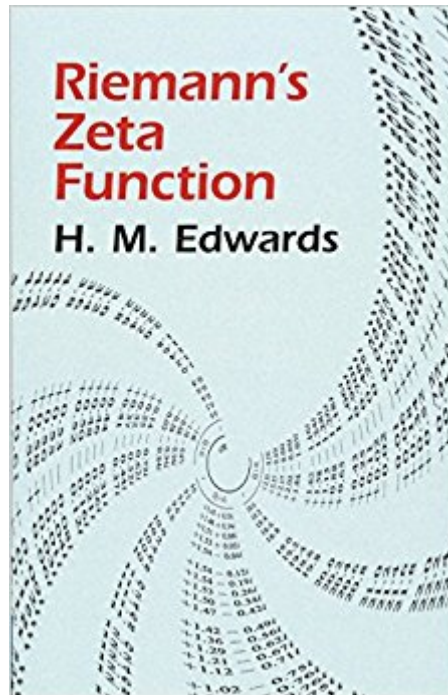




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# Riemann's Zeta Function



## Synopsis

Bernhard Riemann's eight-page paper entitled "On the Number of Primes Less Than a Given Magnitude" was a landmark publication of 1859 that directly influenced generations of great mathematicians, among them Hadamard, Landau, Hardy, Siegel, Jensen, Bohr, Selberg, Artin, and Hecke. This text, by a noted mathematician and educator, examines and amplifies the paper itself, and traces the developments in theory inspired by it. (An English translation of the original document appears in the Appendix.) Topics include Riemann's main formula, the prime number theorem, de la Vallée Poussin's theorem, numerical analysis of roots by Euler-Maclaurin summation, the Riemann-Siegel formula, large-scale computations, Fourier analysis, zeros on the line, the Riemann hypothesis and Farey series, alternative proof of the integral formula, Tauberian theorems, Chebyshev's identity, and other related topics. This inexpensive edition of Edwards' superb high-level study will be welcomed by students and mathematicians. Mathematically inclined general readers will likewise value this influential classic.

## Book Information

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## Customer Reviews

The math is over my head but the explanations are helpful and clear and are giving me a good sense of the process a brilliant mathematician goes through in his explorations. I feel like I'm walking around the base camp of Mount Everest getting fantastic glimpses of the mountain above me.

This is the classic book on the matter, and I did learn things that I did not already know about it. However, the audience is targeted, it seems, to those with a Math Ph.D. I have an advanced degree in physics, and I am entirely fascinated with the zeta function and study it a lot. But he lost me in places and I see that other readers could not follow him either in places. And thus, I cannot give him top marks.

I consider myself more a user of math results than one who really understands math. This book is wonderful because it is not just a compendium of results, but explains the evolution of different areas in math resulting from Riemann's 8-page paper. I read the first chapter like a dense novel (think Dostoyevsky or Pynchon). I liked it so much that I just order another book by Harold Edwards, the one on "Galois Theory"

Everything you need to know about the zeta function in a dense, thorough textbook. My brain feels like the cover after perusing through it. How can something so simple have an immense complex array of properties underneath of it. This book explains that in a thorough way. Warning: you need to know a bit of the language of math and calculus to understand it fully.

I hesitate to add to the chorus of praise here for H.M. Edwards's "Riemann's Zeta Function," for what little mathematics I have is self taught. Nevertheless, after reading John Derbyshire's gripping "Prime Obsession" and following the math he used there with ease, I thought to tackle a more challenging book on the subject. A Topologist friend suggested Titchmarsh's "The Theory of the Riemann Zeta-Function," but I soon bogged down. I happily came across Edwards while browsing, and was pleased both with the low price, and the lucid contents. For those who are mathematicians and like their introductions to the most fascinating math problems straight and touching all horizons of inquiry, then experts appear to have converged on Titchmarsh as the volume for the first string. However, Edward's work is also appropriate for experts and hits the highlights of background leading to the Zeta function. But Edward's chief strength is beyond his intended audience, for it is his accessibility for the occasional mathematician. With some patience, and not without some little pain and an occasional side trip to "The World of Mathematics" or "The Encyclopedia of Mathematics," even a self-trained mathematician can appreciate most of what Edwards is explaining. In short, I heartily recommend to those who have enjoyed John Derbyshire's "Prime Obsession," and have additional steam, to take up Edward's "Riemann's Zeta Function" volume for

further insights and knowledge.

A very clear and quite easily most complete source of information about the Riemann Zeta function. What I liked most as another reviewer pointed out is "It will give you an idea of how these amazing people studied and did math. "

The Riemann Zeta function is one of my favorite function and this text is filled with useful properties of the zeta function.

It's a good book, gives really good motivation for the theory and goes through the history nicely. The only annoying thing is the use of the Pi function instead of the Gamma function.

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