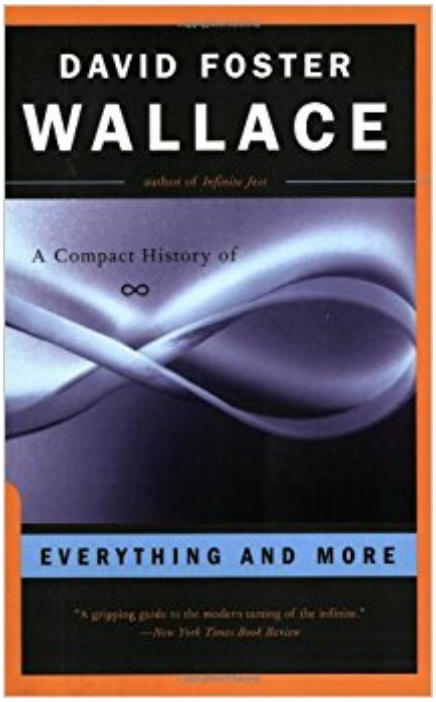
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# Everything And More: A Compact History Of Infinity (Great Discoveries)




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## Synopsis

The best-selling author of Infinite Jest on the two-thousand-year-old quest to understand infinity. One of the outstanding voices of his generation, David Foster Wallace has won a large and devoted following for the intellectual ambition and bravura style of his fiction and essays. Now he brings his considerable talents to the history of one of math's most enduring puzzles: the seemingly paradoxical nature of infinity. Is infinity a valid mathematical property or a meaningless abstraction? The nineteenth-century mathematical genius Georg Cantor's answer to this question not only surprised him but also shook the very foundations upon which math had been built. Cantor's counterintuitive discovery of a progression of larger and larger infinities created controversy in his time and may have hastened his mental breakdown, but it also helped lead to the development of set theory, analytic philosophy, and even computer technology. Smart, challenging, and thoroughly rewarding, Wallace's tour de force brings immediate and high-profile recognition to the bizarre and fascinating world of higher mathematics.

## Book Information

Series: Great Discoveries

Paperback: 368 pages

Publisher: W. W. Norton & Company; Reprint edition (November 17, 2004)

Language: English

ISBN-10: 0393326292

ISBN-13: 978-0393326291

Product Dimensions: 5.4 x 0.9 x 8 inches

Shipping Weight: 6.4 ounces

Average Customer Review: 3.9 out of 5 stars 83 customer reviews

Best Sellers Rank: #1,612,047 in Books (See Top 100 in Books) #104 inÃ Â Books > Science & Math > Mathematics > Infinity #761 inÃ Â Books > Science & Math > Mathematics > Pure Mathematics > Logic #1123 inÃ Â Books > Science & Math > Physics > Mathematical Physics

## Customer Reviews

Before discussing the merits of David Foster Wallace's Everything and More: A Compact History of Infinity, it is essential to define what the book is not. This volume in the "Great Discoveries" series is not a history of the personalities and social conditions that led to the "discovery" of infinity. Nor is it a narrative fixated on the cultish fear of--and obsession with--the infinite that has seemingly driven mathematicians insane over the centuries. Rather, Everything and More is a surprisingly rigorous

march through the 2000 plus years of mathematical research that began with Aristotle; continued through Galileo, Isaac Newton, G.W. Leibniz, Karl Weierstrass, and J.W.R. Dedekind; and culminated in Georg Cantor and his Set Theory. The task Wallace (author of the bestseller Infinite Jest and other fiction) has set himself is enormously challenging: without radically compromising the complexity of the philosophy, metaphysics, or mathematics that underlies the evolving concept of infinity, present the material to a lay audience in a manner that is entertaining. To propel his narrative, Wallace even develops a style that mirrors the mathematical language he probes. One difficulty in his focus on concepts and not a strict human chronology, though, is that his structure is dependent on frequent digressions (especially early on). Patience is required. Wallace demands that his reader walk through the equations, study the graphs and charts, and relearn college-level concepts to follow along on the exploration. Indeed, after one wrenching dip into Zeno’s paradoxes, Wallace spouts at his imagined complaining audience: "Deal." But the book should be deemed a success. If one grants him the attention he requires, Wallace has made the trip richly rewarding. --Patrick O’Kelley --This text refers to an out of print or unavailable edition of this title.

The subject of infinity would probably strike most readers familiar with Wallace as perfectly suited to his recursive style, and this book is as weird and wonderful as you'd expect. There are footnotes galore, frequently prefaced by the acronym IYI ("If You're Interested"), which can signal either pure digression or the first hint of an idea more fully developed in later chapters. Among other textual idiosyncrasies is the constant use of the lemniscate instead of the word "infinity," emphasizing that this is "not just an incredibly, unbelievably enormous number" but an abstraction beyond what we normally conceive of when we contemplate numbers. Abstraction is one of Wallace's main themes, particularly how the mathematics of infinity goes squarely against our instinct to avoid abstract thought. The ancient Greeks couldn't handle infinity, he points out, because they loathed abstraction. Later mathematicians fared better, and though the emphasis is on Georg Cantor, all the milestones are treated in turn. Wallace appreciates that infinity can be a "skullclutcher," and though the book isn't exactly easy going, he guides readers through the math gently, including emergency glossaries when necessary. He has an obvious enthusiasm for the subject, inspired by a high school teacher whose presence is felt at irregular intervals. Had he not pursued a career in literary fiction, it's not difficult to imagine Wallace as a historian of science, producing quirky and challenging volumes such as this every few years.Copyright 2003 Reed Business Information, Inc. --This text refers to an out of print or unavailable edition of this title.

I read math only when I can enjoy it; this book is enjoyable. Wallace is funny, iconoclastic, and over-the-top. He freely acknowledges that modern math is not intelligible to the layman (thank you!) because it is so abstract (yes!) but it can be understood in terms of its progress toward abstraction, set theory, and how infinity (or nothing) fit into the scheme (or don't).As I was reading this book I thought, "This guy must be bipolar." It wasn't until afterward that I learned he suicided because of an untreatable affective disorder. How sad, totally sad.Along the way I realized the importance of stuff I had been taught (but hadn't really absorbed) in my Fundamental Concepts of Math class at college (like, Oh, wow, that's why Professor M. kept saying that...) ; and some important concepts that I didn't really learn because, well, you know, I'm a layman.So, this was fun (for me at least).I was also amused that Wallace calls his book a "booklet." It is organized around concepts and sections and paragraphs (and his footnotes, also a couple of Emergency Glossaries), not around chapters. I guess chapters implies a book, sections implies a "booklet." Some booklet.

This book is well written in a conversational tone that makes you feel like you're sitting down, talking with the author. The level of detail was just right -- enough to appreciate the complexities of the problems with enough proofs to make you understand without going overboard. (And, where appropriate, just sketches without formality)I also really like how the author traced the history of math through the greeks and into modern math, showing deep connections between Pythagoras, Plato, and Aristotle, and how they influenced (and continue to influence) math today. Many topics from school came back and seemed much more alive as the metaphysical impact was explained.If you survived college calculus and still retain some basic understanding of it, then you probably won't struggle to get through this book. If you stopped after high school math then you'll struggle.I'm a computer scientist by trade, and I found many interesting connections between computability, decidability, complexity theory, recursion, induction, countable vs. uncountable, etc. It was a great way to further my education in my spare time.The only thing that drove me nuts is the author's chapter/section writing style. Why can't he just use normal chapters like the rest of the world? ...And a table of contents. If he had been a little more conventional then it would have been perfect.

It's a really good an interesting book about a fascinating subject.I'm not super thrilled about the writing style, favouring aberrations such as parentheses inception and overly long paragraphs. As a mathematical paper, the style is quite OK. As a novel, it's kind of an eye sore.In any case, I enjoyed it plenty and wish more literary authors were as passionate about mathematics as DFW, or more

mathematicians were inclined to share about their subject and create pieces such as this one. Math history is a gripping, wonderful area not nearly enough covered, and set theory is one of its more fascinating topics.

I thoroughly enjoyed this delve into the concept of infinity. It's abstract to be sure. Heavy on the math but explained very well if you give it the time. I spent a lot of effort reading and re-reading paragraphs working on making sense of a number of the formulas but by the end I had a grasp of the basic principles underling set theory and could hold a deeper appreciation for the complexity of pure math.

This book is not for everyone. I have a math degree from MIT and although I was definitely not the greatest math student in the world I felt like I was probably above average in terms of what DFW expected his audience's math education to include. I had no idea how he was going to write a non-textbook style book on this topic.He almost succeeds in writing a popular book on this branch of math but it doesn't actually succeed in that I think most people will leave this book, if they even get through it at all, still confused about much of this topic and not really understanding a lot of his proofs or the full significance of many of the ideas. That being said, he still does a really good job. I think his goal is basically unachievable because math requires you to read like 1 line of information, then think for a while, and probably write some stuff down to make sure it makes sense, and then read another line. This is a tall order for people reading a popular book and I think these ideas can only be absorbed at a normal reading pace, which is what people expect of a popular book, if you can think of really clever examples that make each unit of information obvious so that the reader doesn't need to stop to think, so that the reader just understands and absorbs the information as they're understanding the words. That's not what happens here. What's impressive is that DFW describes the whole history of ideas, includes the proofs, and fits the parts of the story together so that they lead to the bigger ideas.I'd recommend this book to people who enjoy DFW's writing style, know high school level math, are wiling to put thought into the ideas that he goes through or are willing to just accept his assertions of various ideas being true. I do not recommend this book to people who want something easy to read and don't have the time or the patience to invest in being pretty active about understanding some complicated ideas. I think the ideal audience for this book is people who would describe themselves as loving both DFW and math, or someone who already knows all of these ideas really well and just wants an amusing little recap.

Excellent review of math. If this is not a review of math for you and math is of no interest to you, just enjoy the writing and go as far as you can. Feel free to bail out with not the slightest twinge of failure. Math at this level is a fortress to be scaled at your peril, but the view gets better the higher you climb.

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