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# One, Two, Three: Absolutely Elementary Mathematics

One, Two, Three  
*Absolutely Elementary Mathematics*



David Berlinski  
*Author of A Tour of the Calculus*



## Synopsis

From the acclaimed author of *A Tour of the Calculus* and *The Advent of the Algorithm*, here is a riveting look at mathematics that reveals a hidden world in some of its most fundamental concepts. In his latest foray into mathematics, David Berlinski takes on the simplest questions that can be asked: What is a number? How do addition, subtraction, multiplication, and division actually work? What are geometry and logic? As he delves into these subjects, he discovers and lucidly describes the beauty and complexity behind their seemingly simple exteriors, making clear how and why these mercurial, often slippery concepts are essential to who we are. Filled with illuminating historical anecdotes and asides on some of the most fascinating mathematicians through the ages, *One, Two, Three* is a captivating exploration of the foundation of mathematics: how it originated, who thought of it, and why it matters.

## Book Information

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## Customer Reviews

I stumbled across this book while searching for other related pop books about math. I am very pleased that I took the chance to order and read it. It is entertaining, and informative on the history of math. The most intriguing portion to me was how Berlinski explained the origin of the negative numbers, the mysterious digit zero, why multiplication is different than addition, why a base number taken to the zeroth power equals one and why division by one equals the number, as these were all areas where many math textbooks and teachers have never explained why to suit my curiosity. I encourage the curious reader to get this must read book!

If you are bright and verbal and curious, but somehow got turned off from math early in life, I would suggest that Dr. Berlinski can help. Mathematics, at its origin, was not based on the rote following of formulas, but on the solving of complex mental puzzles. Once you see that, you can become a math person. Berlinski has finally written the book with which to start. Please ignore the noisy minority of one star granters to Berlinski's work which has nothing to do with his mathematical quality and everything to do with angry atheists lashing out at a man who dares to question their particular brand of jihad. I've had the pleasure of interviewing David on the radio and it was a real treat. Review by Jerry Bowyer.

Numerous students, I'm convinced, have a mental block against either English or math. Mine is the latter, which is why I'm not a physicist, despite being attracted to physics. I did first pick up "A Tour of the Calculus" hoping to at some point along the way unravel the mystery of its subject. A Tour of the Calculus. But this book I picked up purely from my English major desire to read more Berlinski. Odd as it sounds, I simply put up with all the math in this book in order to read the writing, which is erudite and lyrical. Along the way, however, the author started getting around my defenses, and I started following the formulas. Why is a whole 'nother paragraph. Berlinski anticipates, and voices, the reader's (or at least this reader's) questions and objections along the way. Yes, I learned the number line. But why is there a number line? And, if it comes to that, why read about it? Because it's an amazing invention, DB made me see, and like a truly top notch teacher, he related it to counting, which has forever taken on a sort of golden glow for this reader, and showed how it can even handle the negative numbers, themselves an amazing invention. That would have been enough, but there's more. And it's even more elementary or primal. "The calculations and concepts of absolutely elementary mathematics are controlled by the single act of counting by one." You're kidding! I'm hooked, and that's only page five. There aren't many of the long, lyrical portraits that seem drawn from forgotten novels that are so prevalent in "Calculus", although they start sprouting in the second half of the book. But there are some terse bits in the history of mathematics that tie everything together. It's even possible to "do some forgetting" and see these discoveries afresh, and feel their attendant excitement. But also, revisiting the classroom scenes, Berlinski asks the questions students form but don't put, and shows how to get to the answers teachers might not give. It's truly exciting to see the relations between the various operations of addition, subtraction, multiplication and division, and the various proofs that work for some of these and not others, with Berlinski explaining and showing why this would be the case. Moreso, how this led to things before I only knew the names of: sets, and rings, and succession, and fields, and, in the tantalizing realm of

physics, Planck's length. I knew of the mysterious properties of zero from reading about binary, heretofore the most interesting and fruitful mathematical idea I had encountered, but Berlinski's discussion of zero opens onto endless vistas. He brings up base 10 and the decimal system, but not in a discussion of bases (binary doesn't figure in anywhere). rather, of exponents and logarithms. This last always seemed to me to be entirely arbitrary, but his brief once over clears it right up, and he doesn't even delve into sines and cosines. That's how absolutely elementary this mathematics is. Which makes for absolutely engaging reading.

I stole my review title from a quote about the book on the back cover, but it is an accurate description. I found this book through a long series of events. First I found Berlinski from a guest spot he did on Ben Stein's movie 'Expelled: No Intelligence Allowed.' Then as my personal research in the sciences continued I found him in various guest spots and interviews including an interview on his position of dissent on Darwinian Evolution. It was an interview about his book 'The Devil's Delusion.' I had seen countless videos and speeches by Berlinski. I admire his vast knowledge, vocabulary, word choice, and understanding. He has a true passion for his subjects and a desire for all his readers to take it with them. I am far from passionate about mathematics but I am passionate about truth. Berlinski is a brilliant teacher unlike most of our high school math teachers in this way; he not only is brilliant enough to understand his own subject within himself but to be able to present it in the most basic way possible to the least naturally intellectually gifted (Me). He is an intellectual that is able to present himself as an everyman. I cannot stress this point enough. How many books have you read the back of when the subject matter alone makes you cringe? It is not that you aren't interested in the subject matter. This is generally because we tend to feel that we will be inadequate to understand not necessarily the material presented, but how it is presented and by whom. Berlinski has the amazing ability to hold your hand as you walk through what seemed before to be dangerous ground. I recommend not only this book but Berlinski as a man. He is a powerful mind that I am glad to have encountered in this life.

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