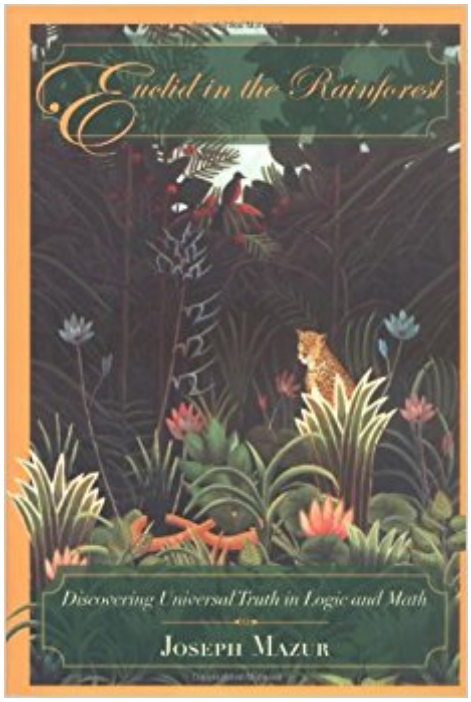
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Euclid In The Rainforest: Discovering Universal Truth In Logic And Math



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Synopsis

Like Douglas HofstadterÃ¢â ¬â„¢s GÃƒÂ¶del, Escher, Bach, and David BerlinskiÃ¢â ¬â„¢s A Tour of the Calculus, Euclid in the Rainforest combines the literary with the mathematical to explorelogicÃ¢â ¬â •the one indispensable tool in manÃ¢â ¬â„¢s quest to understand the world. Underpinning both math and science, it is the foundation of every major advancement in knowledge since the time of the ancient Greeks. Through adventure stories and historical narratives populated with a rich and quirky cast of characters, Mazur artfully reveals the less-than-airtight nature of logic and the muddled relationship between math and the real world. Ultimately, Mazur argues, logical reasoning is not purely robotic. At its most basic level, it is a creative process guided by our intuitions and beliefs about the world. --This text refers to the Paperback edition.

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Customer Reviews

Ã¢â ¬Å“Devoid of complex proofs and dense mathematical language; instead, the author has drawn upon his experience as a formative teacher to create a book rich in content that connects with real-world experiences.Ã¢â ¬Â• Ã¢â ¬â •Library JournalÃ¢â ¬Å“Joseph Mazur brilliantly explores the symbiotic relationship between the physical and the mathematical worldsÃ¢â ¬Â¦A stylish and seductive book that convinces the mind even as it delights the soul.Ã¢â ¬Â• Ã¢â ¬â •PEN American Center --This text refers to the Paperback edition.

"How does one summarize a book about rainforest adventures, probability, the CafÃƒÂ©

Luxembourg, Euclid, and prime numbers? This is an absolutely delightful book, full of insight, suffused with gentle humor–a picaresque novel of mathematics. What do we mean by proof and persuasion in the most symbolic of fields, Mazur asks, and responds with stories that effortlessly guide us to the heartland of reason. This is a fabulous book, in all senses, from beginning to end." —Peter Galison, Mallinckrodt Professor of the History of Science and of Physics, Harvard University, author of Einstein's Clocks, PoincairÃƒÂ©'s Maps"Euclid in the Rainforest is beautifully written and packed with insights into how mathemeticians convince themselves they are right. Mazur is a talented teacher who knows his subject inside out, and his delightful stories take his readers to the heart of mathematics–logic and proof. This original and charming book is accessible to anyone, and deserves major success." —Ian Stewart, Professor of Mathematics, University of Warwick, author of Math Hysteria, and Flatterland "My chief regret after more than forty years of trying to teach concepts in mathematics and statistics to biology students is that I did not have Mazur's book available. It should be assigned reading for all undergraduates in science." —R. C. Lewontin, Alexander Agassiz Professor, Harvard University"Mazur is an excellent storyteller. Euclid in the Rainforest is a warm and creative masterpiece that reveals the spirit of mathematics."—Tadatoshi Akiba, Mayor of the City of Hiroshima"Mazur has a wonderfully engaging writing style, and a marvelous feel for the interface between the physical world as we experience it every day and the mathematical one. This book is a pleasure to read." —Joseph Harris, Chair, Department of Mathematics, Harvard University"Mazur's Euclid in the Rainforest is written with warmth and a lifetime's attachment to the things of this world and the forms of the world it manifests. Here are the pleasures of sitting with the author, as a young man, learning his craft in a Greenwich Village cafe from an old professor; and later on, teaching the craft in turn to an eight-year-old. Inspiring stuff. By overhearing such conversations as these, the reader too is led to savor the beauties of mathematics." —Robert and Ellen Kaplan, co-founders of The Math Circle, and co-authors of The Art of the Infinite: The Pleasures of Mathematics"Delightful, full of insight, suffused with gentle_humor–a picaresque novel of mathematics."—Peter GalisonHow do we know that something is true? How do we know that things really are what they seem? Many people think math and science are the ultimate authorities on reality. Math defines abstract, universal truths; scientific truths are established by experiments in the real world–but underlying both kinds of knowledge is logic. In Euclid in the Rainforest, Joseph Mazur examines the three types of logic that are the basis of our knowledge about the world we live in: the classical logic of the Ancient Greeks, the weird logic of infinity, and the everyday logic of plausible reasoning that guides all science today. Through tales of

great moments in the history of math and science, stories of students making discoveries in the classroom, and his own quirky adventures in the Greek Islands, New York, and the jungles of South America, Mazur illuminates how we uncover truth in the tangled web of our experiences–and convince ourselves that we are right. Euclid took the incipient logic of his time to new heights with his magnificent geometry, the whole edifice of which is built on just five assumptions. That logic rigorously defined proof, cleverly avoiding problems with infinity that were introduced when the Pythagoreans discovered that the diagonal of a square could not be measured and Zeno of Elea used infinity to argue that motion is logically impossible. It would be almost two millenia, though, before a good understanding of the logic infinity emerged and made all kinds of technology possible. Plausible reasoning–which is based on the math of probability– lets us assess the general conclusions we derive from specific cases in scientific studies. It gives us the confidence to believe that a conclusion reached today will be true tomorrow, ultimately driving scientific, and human, progress.In lucid, ebullient language, Mazur, a professor of mathematics for over thirty years, makes the fundamentals of the three fundamental types of logic widely accessible for the first time. Deeper questions at the heart of the process of discovery are laid bare: What does it mean to believe a proof? Where does the finite end and the infinite begin? How can we be sure that the statements we make about the material world are accurate? Exposing the surprising roles of intuition, belief and persuasion in logic and math, Mazur tells a real-life detective story that has been going on for millenia: the pursuit of ultimate truth about our world, our universe, and ourselves.>

I bought this book for my mathematics class. If you don’t like math, which I didn’t, then this is the book for you. It’s a true and fun story that takes you through math without even knowing it. Now, I mean, ALL types of math.

I had difficulty becoming engaged in reading this book even though I am a math teacher. Ended up giving it away.

The book does not deliver to the promise in its title. It is yet another "discover fun in mathematics" book, mixed with a poorly written travel account.

In this wonderful book, mathematician Joseph Mazur takes us on a tour of the concepts of proof, infinity, and probability. He couches his discussions within stories of world travels he made as a

young man through places like the South American rainforests and the islands of Greek.For those who have had geometry in high school, the first section of this book is amazing. Professor Mazur not only brings out the importance of mathematical proof by looking back at the ancient Greeks whilst traveling as a young man through the rainforest no less, but he also points out the weaknesses of classical proof in analyzing concepts like infinity. These areas of weakness then lead him forward to the next two sections where he picks apart infinity and lays the groundwork of probability, all while recounting more youthful travels.To be honest, itÃƒÂ¢Ã â ¬Ã â„¢s hard to be sure whether these mathematical concepts came up within the context of his actual travels or whether he re-contextualized his travels to bring out the mathematical concepts he was interested in investigating. (A little bit of both, probably.) It doesnÃƒÂ¢Ã â ¬Ã â„¢t really matter, however. He gets the math across in an exciting way and thatÃƒÂ¢Ã â ¬Ã â„¢s worth a little fiction, if necessary.

...the autobiographical content; for me...the math. And yet, the pop math exposition in this book is, by and large, standard fare: some reflections on mathematical logic, infinity, the calculus, etc. There was little in this book I hadn't encountered in many a pop math book before. For someone with little math background, or little experience trolling the pop math literature, EitR is a decent enough, entertaining enough, thought-provoking enough, and well-written enough book. I imagine Mazur is/was a very fine math teacher. What kills 2 stars for this reader, though, are all the autobiographical preambles to each chapter: they're not compelling, they're crafted in purple-y prose, and they read as though they've been forced to fit the mold of whatever math theme Mazur is about to discuss. In other words, they're a distraction. I'm not sure what Mazur felt they added to what is in essence a popular math book (as opposed, e.g., to a mathematical memoir). Had he omitted them, I'd have upped my rating to a 4th star, though with the caveat that my recommendation is directed to novice lay math readers, not to habituees of the genre.

I should start by saying that I didn't read this book to learn anything about mathematics; I already knew all the math in it. But I have long been interested in ways to present math ideas to people who aren't strong in math. Mazur's approach of putting the math into stories sounded interesting.For example, in the section on Euclid, Mazur starts with a story about soldiers in the rain forest trying to pull a truck out of a gully. This involves a bit of trigonometry, which leads to a discussion of the Pythagorean Theorem. But it's not really about geometry; it's about how mathematicians approach problems and how they prove their solutions and even what it means to say that some mathematical

statement is true. Mazur illustrates this by showing two non-mathematicians struggling with the theorem, trying to arrive at a solid proof, whatever that means. How they arrive at the proof, and what it means for something to be a proof, are just what this book is about.Who, other than a teacher of mathematics, can profit from this book? The target audience consists of people who don't have much math education but are interested. But there is significant use of diagrams, numbers, and algebra. (By algebra I mean the rules of arithmetic; you don't have to be able to solve equations.) If you have "math anxiety" you might have trouble getting past that. Then again, the chatty style is designed to ease you through, so you might give it a try.You might decide that my review would be more useful if you knew a bit more about my background. If so, click on my name at the head of this review.

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