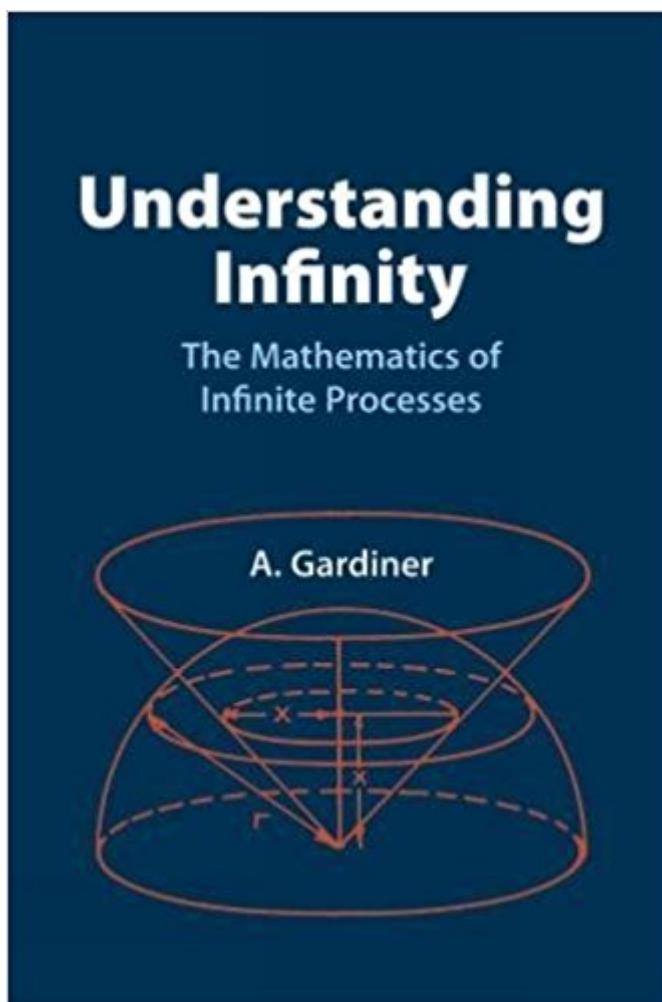


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Understanding Infinity: The Mathematics Of Infinite Processes (Dover Books On Mathematics)



Synopsis

Conceived by the author as an introduction to "why the calculus works" (otherwise known as "analysis"), this volume represents a critical reexamination of the infinite processes encountered in elementary mathematics. Part I presents a broad description of the coming parts, and Part II offers a detailed examination of the infinite processes arising in the realm of number--rational and irrational numbers and their representation as infinite decimals. Most of the text is devoted to analysis of specific examples. Part III explores the extent to which the familiar geometric notions of length, area, and volume depend on infinite processes. Part IV defines the evolution of the concept of functions by examining the most familiar examples--polynomial, rational, exponential, and trigonometric functions. Exercises form an integral part of the text, and the author has provided numerous opportunities for students to reinforce their newly acquired skills. Unabridged republication of Infinite Processes as published by Springer-Verlag, New York, 1982. Preface. Advice to the Reader. Index.

Book Information

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Customer Reviews

Most of the books I have given a 4-star rating to would be in the category of "If they'd only done this thing differently, I'd have given it 5." This book is different. I'm taking literally the definition "5 = I love it!" and on that basis this book cannot get 5 stars, though I can't say exactly what I don't quite like. The book does a good job of taking the reader through the steps needed to explain "why the calculus works" -- and it really doesn't require calculus to understand most of this book, though you

need calculus to understand the motivation for a lot of what the book does. You need only have a decent grounding in high school geometry and algebra to understand the book. Still, it isn't an easy read. I've found myself putting the book down and coming back to it later several times. Yet I can't say that the book is hard to read because it's badly written; I think it's written decently well. I think it's just that the topics it covers are harder going than a lot of the math I read. So, while I don't love this book, I'd recommend it to someone who wants to know something about the motivation for all those weird epsilons and deltas and the non-intuitive definitions of topics like continuity. It does that job, and does it as well as any book I know of.

An unusual and interesting look at the basis for calculus and analysis. The only book I know of that provides a strong motivation for the Dedekind/ Weirstrass foundation of calculus. Recommended for anyone doing analysis. Quite accessible for anyone who has done first year or even high school calculus

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