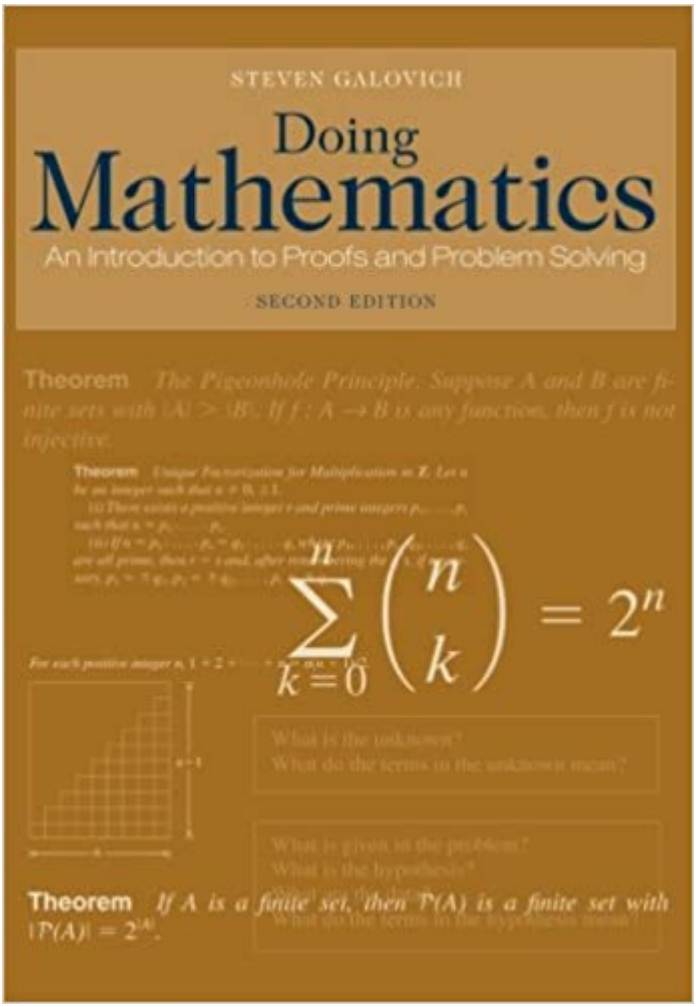
# Doing Mathematics: An Introduction To Proofs And Problem-Solving



## Synopsis

Prepare for success in mathematics with DOING MATHEMATICS: AN INTRODUCTION TO PROOFS AND PROBLEM SOLVING! By discussing proof techniques, problem solving methods, and the understanding of mathematical ideas, this mathematics text gives you a solid foundation from which to build while providing you with the tools you need to succeed. Numerous examples, problem solving methods, and explanations make exam preparation easy.

## Book Information

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## Customer Reviews

Steven Galovich is Professor of Mathematics at Lake Forest College. Dr. Galovich’s specializations are algebraic number theory and algebra, and his interests include the nature of mathematics, Fermat’s Last Theorem, and the history of mathematics. In 1988, he won the Carl B. Allendoerfer Award for expository writing presented by the Mathematical Association of America for the paper "Products of sines and cosines" published in Mathematics Magazine.

This is an outstanding book that teaches mathematics from the ground up, starting with elementary logic and working its way up gradually through the techniques and notation needed to formulate and rigorously prove theorems. Along the way, it touches on the fundamentals of set theory, number theory, calculus, analysis and linear algebra. There are no prerequisites, making the book suitable for everyone from precocious high schoolers to graduate students.I had the pleasure of using the earlier edition of this book ("Introduction to Mathematical Structures," 1989) for the logic and proofs

course required of math majors at Carleton College. After this edition came out, I became the grader for the course. I found the problems in the book to be very well-crafted, challenging yet approachable for the students. Nearly all of them felt both necessary and sufficient.The book is much-improved in its second edition, with a generous number of examples and exercises. I would recommend it to anyone pursuing or even contemplating a degree in mathematics, science or philosophy.

This is a swell introduction to analysis. Plenty of good examples, with a well-ordered approach to the material. I particularly appreciated the section on the mindsets and assumptions that affect how we do mathematics. It's really helpful in seeing that mathematics is creative and intuitive, and not as bluntly algorithmic as so many high school classes seem. A quality read.

I am astonished by the other reviews. Obviously these reviewers are far more proficient in mathematics than I. However, I feel that I am on strong ground when I disagree with the notion that this book would make a good introductory text for undergraduates or high school students. Many parts of the text are not clear. Often the author's explanation of defnitions (which are usually easy to understand) create confusion. Further, I do not think starting out with truth tables is particularly appropriate. Better that the author set the context for valid and invalid arguments, then implications, then the details of the truth tables. Chapter 4 on Set Theory is generally horrible, particularly the subject of Relations. (The reader would be better served by relying on the classics such as Halmos.) I found that Wikipedia is much more illuminating and clearer than Galovich. In general, using Galovich drove me to rely on Wikipedia, Mathworld, etc more than any other math text.In conclusion, I think the author tried to cover too many subjects in 300 pages. Also I think the layout and organization of the book needs some work.

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