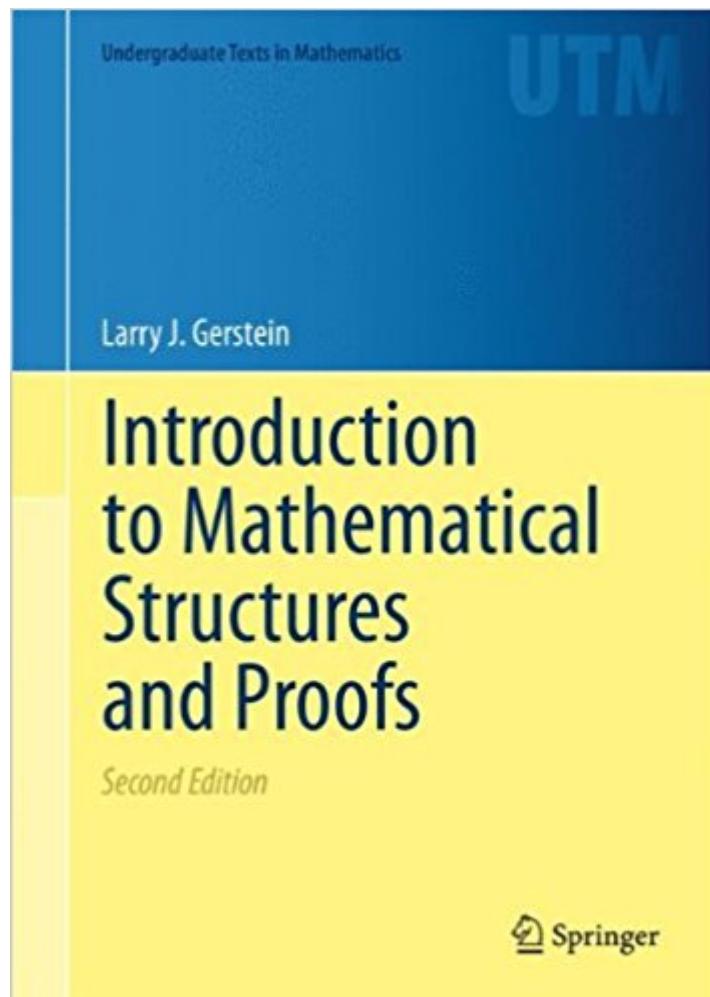


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# Introduction To Mathematical Structures And Proofs (Undergraduate Texts In Mathematics)



## Synopsis

As a student moves from basic calculus courses into upper-division courses in linear and abstract algebra, real and complex analysis, number theory, topology, and so on, a "bridge" course can help ensure a smooth transition. *Introduction to Mathematical Structures and Proofs* is a textbook intended for such a course, or for self-study. This book introduces an array of fundamental mathematical structures. It also explores the delicate balance of intuition and rigor and the flexible thinking required to prove a nontrivial result. In short, this book seeks to enhance the mathematical maturity of the reader. The new material in this second edition includes a section on graph theory, several new sections on number theory (including primitive roots, with an application to card-shuffling), and a brief introduction to the complex numbers (including a section on the arithmetic of the Gaussian integers). Solutions for even numbered exercises are available on [springer.com](http://springer.com) for instructors adopting the text for a course. From a review of the first edition: "...Gerstein wants very gently to teach his students to think. He wants to show them how to wrestle with a problem (one that is more sophisticated than "plug and chug"), how to build a solution, and ultimately he wants to teach the students to take a statement and develop a way to prove it...Gerstein writes with a certain flair that I think students will find appealing. ...I am confident that a student who works through Gerstein's book will really come away with (i) some mathematical technique, and (ii) some mathematical knowledge. Gerstein's book states quite plainly that the text is designed for use in a transitions course. Nothing benefits a textbook author more than having his goals clearly in mind, and Gerstein's book achieves its goals. I would be happy to use it in a transitions course." • Steven Krantz, *American Mathematical Monthly*

## Book Information

Series: Undergraduate Texts in Mathematics

Hardcover: 401 pages

Publisher: Springer; 2nd ed. 2012 edition (June 6, 2012)

Language: English

ISBN-10: 1461442648

ISBN-13: 978-1461442646

Product Dimensions: 7 x 0.9 x 10 inches

Shipping Weight: 2 pounds ([View shipping rates and policies](#))

Average Customer Review: 5.0 out of 5 stars [See all reviews](#) (2 customer reviews)

Best Sellers Rank: #451,031 in Books (See [Top 100 in Books](#)) #69 in [Books > Science & Math >](#)

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## Customer Reviews

Dr. Gerstein is now a friend of mine. I highly recommend this textbook in the Field of Logic and Mathematics.

We are using this book in my Foundations of Math class, which deals a lot with graph and set theory, as well as proofs. The professor chose the book after listening to the author speak at a conference, and I'd say it was a good choice. The book reads very easily, and the problems do well at not being overly complex, while still being challenging enough to conduce learning.

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