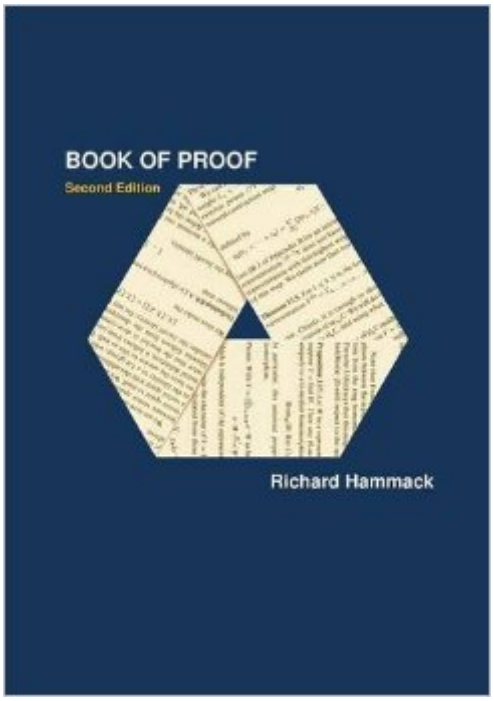
Book Of Proof



Synopsis

This book is an introduction to the language and standard proof methods of mathematics. It is a bridge from the computational courses (such as calculus or differential equations) that students typically encounter in their first year of college to a more abstract outlook. It lays a foundation for more theoretical courses such as topology, analysis and abstract algebra. Although it may be more meaningful to the student who has had some calculus, there is really no prerequisite other than a measure of mathematical maturity. Topics include sets, logic, counting, methods of conditional and non-conditional proof, disproof, induction, relations, functions and infinite cardinality.

Book Information

Paperback: 314 pages

Publisher: Richard Hammack; Revised edition (May 31, 2013)

Language: English

ISBN-10: 0989472108

ISBN-13: 978-0989472104

Product Dimensions: 7 x 0.7 x 10 inches

Shipping Weight: 1.2 pounds (View shipping rates and policies)

Average Customer Review: 4.7 out of 5 starsÂ Â See all reviewsÂ (38 customer reviews)

Best Sellers Rank: #19,588 in Books (See Top 100 in Books) #6 inÂ Books > Science & Math > Mathematics > Pure Mathematics > Discrete Mathematics #11 inÂ Books > Science & Math > Mathematics > Pure Mathematics > Logic #147 inÂ Books > Textbooks > Science & Mathematics > Mathematics

Customer Reviews

As an M.Sc. in Electrical Engineering, I had to get a pretty extensive background in applied math, but almost nothing in theoretical math. I've lately taken an interest in various types of algebras, but I realized I didn't have the theoretical background.In preparation for a (live) class in Abstract Algebra, I needed to learn to do formal proofs, and I didn't want to sit through a full semester of that. So I looked for a self-study book, and "Book of Proof" turned out to be the book. It's tailor-made for self-study, and as a bonus, it's very affordable.Dr. Hammack literally starts at the beginning, with the basics of notation, sets, logic, etc. He introduces proofs gently enough to allow a determined self-student stay with it. There are plenty of exercises with odd-numbered solutions and these of course should not be skipped.Dr. Hammack then works through what amounts to a survey of various formal proof types, with plenty of examples and sufficient discussion. All of the major types

are covered. My one minor criticism is that I think proof by induction could have used more attention, but you can supplement that elsewhere if you have the need or the urge.I wouldn’t call this book either "deep" or "comprehensive" but that’s not a criticism. The book is what it should be, a survey course, and it’s at least enough to prepare a student for the next steps. Combined with a course in Linear Algebra, Abstract Algebra will come within reach, as will other higher-level, deeper, and more specialized courses.Of course, it almost goes without saying that if you elect self-study, you’ve got to pay attention and work at things. No skimming! But I’m finding the payoff is high. This is clearly the right book for home use. It’s lucid, literate, well-constructed, and affordable. Hats off to Dr. Hammack for his contribution to the determined learner.

I used this as a required text (along with a broader discrete math text) in a college-sophomore level discrete math course that I taught last fall. It’s a very nice, readable text with good exercises. In addition to covering proof techniques, it also has a nice section on cardinality. I recommend it highly. A digital version is available for free at the author’s website (just do a search on the author’s name, Richard Hammack).

This is hands down the best and math textbook that I ever learned from. It is by far the most important one that I own.I can say that before this text, I never deeply understood or appreciated any subject in math, beyond the very elementary and the "mechanical" technique. This book gave me an understanding of what mathematics (and the logic on which it rests) really is.I can even go as far as saying that it changed ME; not just as a student of math. Because you gain a whole new, powerful method of thinking about and analyzing the world.This book is ideal for self-study. It is simple and unassuming in its layout, the graphics and exposition; yet for me it provided the only pathway I ever found into deep appreciation and true understaing in math.It starts from the most elementary in logic; and then builds from there; to cover the major proof strategies while touching upon some major topics in mathematics and number theory.I don’t know if you have to be a math genius to write such a book; or maybe you just need be a genius in teaching math. But Professor Hammack has achieved something which I never saw anyone else do.

The book offers a succinct summary of the basic methods of proof and does so in a style that is more informal than that found in other texts such as How to Prove It or Discrete Mathematics and Its Applications. Because of its brevity, it does not cover all of the topics that those books that I mentioned do; however, its discussion of the methods of proof is complete. It makes a good book to

have in addition to a more extensive book on introductory discrete mathematics.

I can’t think of a better book to complete in summer before attending college to study mathematics, computer science, or engineering. Its an outstanding toolbox of thought for analytic deductive thinking and reasoning.

I used this book in an "Intro to Proofs" course and was very pleased. I assigned readings and problems for students to complete at home, and then we did other, more difficult problems in class. Much of the rigor is hidden in the exercises, and there are some very good exercises from which to choose in order to challenge students.I will definitely use this text again.

This is a very helpful guide to writing proofs. There are numerous good examples and problems at the end of each chapter, with solutions to odd numbered problems in the back. As stated by the author, the purpose of the book is to prepare students for higher level math courses, and this book makes it very clear how to read and write proofs. In addition, this book would be accessible to anyone who has studied algebra; calculus is not a prerequisite to understand the material in this book.

The book contains all the useful information to prepare a student for advanced mathematical courses without the density that usually comes with such subject matter. The book--I dare say--has a light-hearted spirit about it, and any student considering a technical career should consider reading this.

Proven 5-Week Program Arrest-Proof Yourself Litigation-Proof Patents: Avoiding the Most Common Patent Mistakes What's So Great about God: Bad Things Happen. Is there a God who cares? Yes. Here's proof. Godforsaken: Bad Things Happen. Is there a God who cares? Yes. Here's proof. Proof of Vedic Culture's Global Existence Making Marriage Work: A Step By Step Guide To Build A Strong, Divorce-Proof Marriage Heaven is Real for All of Us: Proof of Heaven and Creating Heaven On Earth by My Angel Daughter Aimee Home Defense: The Ultimate Prepper's Guide to Turn Your Home into a Disaster-Proof Fortress (Long-Term Survival) Mathematics and Politics: Strategy, Voting, Power, and Proof