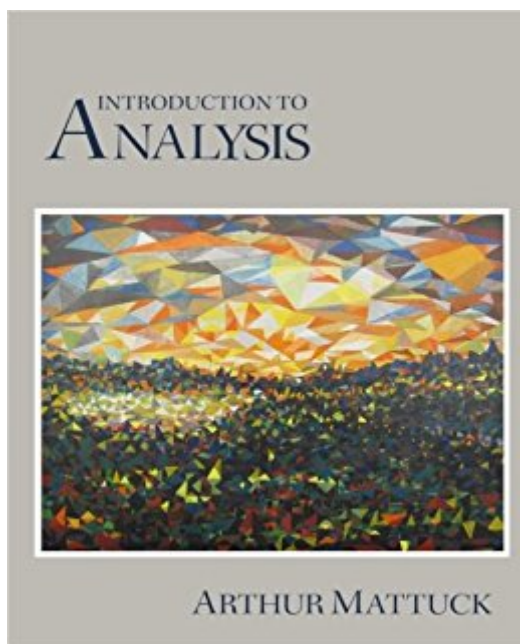The book was found

Introduction To Analysis

Synopsis

This book is meant for those who have studied one-variable calculus (and maybe higher-level courses as well), generally skipping the proofs in favor of learning the techniques and solving problems. Now they are interested in learning to read proofs, and to find and write up their own: perhaps because they will need this for the next steps in their chosen field, or for intellectual satisfaction, or just out of curiosity. There are two paths to this. Some books start with a great leap forward, giving the definitions in n-space. This requires an excursion into point-set topology, whose proofs are unlike those of the usual calculus courses and are a roadblock to many. The path chosen by this book is to start like calculus does, in 1-space (i.e., on the line) and focus on the basic definitions and ideas of one-variable calculus: limits, continuity, derivatives, Riemann integrals, and a few more advanced topics. It's done rigorously, but also in as familiar a way as possible. So from the start it will use as a source of examples what you know (with occasional reminders): K-12 mathematics and basic one-variable calculus, including the log, exp, and trig functions. This takes up about two-thirds of the book, and might be as far as you wish to go. It sounds like just repeating calculus, but students say that it feels very different and is not all that easy. The rest of the book gets into ideas from advanced calculus used in lower-level courses without proof: uniform convergence, differentiating infinite series term-by-term and integrals containing a parameter (the Laplace transform, for instance). For the latter, it's finally time to learn about point-set topology in the plane (2-space, but n-space is no harder). There's also for the curious or needy an optional chapter with the most important facts about point-sets of measure zero on the line and a more powerful integral, the Lebesgue integral. Two appendices respectively provide needed and optional background in elementary logic, and four more give interesting applications and extensions of the book's theory. For more details, click on "Look Inside" to see the Table of Contents. Some generally helpful features: --Leisurely exposition, with serious comments about proofs, other possible arguments, writing advice; some semi-serious comments too; --Attention paid to layout and typography, both for greater readability, and to give readers models they can imitate; --Questions after most sections of a chapter to firm up what you just read, with Answers of various sorts at the end of the chapter: single words, hints, complete statements, formal proofs. Mathematically helpful features: --The language of limits is simplified by suppressing the N and the delta when their explicit value is not needed in the argument, replacing them with standard applied math symbols meaning "for n large" and "for x sufficiently close to a". These are introduced carefully and rigorously; some caution is needed, which is described at the end of the Preface (click "Look Inside"). --The book tries to go back to the roots of real analysis by emphasizing estimation and approximation, which

use inequalities rather than the equalities of calculus, but have a similar look, so that many proofs are calculation-like "derivations" that seem familiar. But inequalities are often mishandled and warnings are given. For examples of these features and writing style, go to the author's home page, link to "book", then link to "sample pages" from the first three chapters. The book was developed at MIT, mostly for students not in mathematics having trouble with the usual real-analysis course. It has been used at large state universities and at small colleges, as well as for independent study. Students evaluate it as readable and helpful. The new printing, by CreateSpace and at a reduced price, is the eighth, incorporating all known significant corrections and a new Appendix 6.

Book Information

Paperback: 480 pages

Publisher: CreateSpace Independent Publishing Platform (July 10, 2013)

Language: English

ISBN-10: 1484814118

ISBN-13: 978-1484814116

Product Dimensions: 7.5 x 1.1 x 9.2 inches

Shipping Weight: 2.2 pounds (View shipping rates and policies)

Average Customer Review: 3.5 out of 5 stars   19 customer reviews

Best Sellers Rank: #258,538 in Books (See Top 100 in Books)   #178 in Books > Science & Math > Mathematics > Mathematical Analysis

Customer Reviews

This new book is written in a conversational, accessible style, offering a great deal of examples. It gradually ascends in difficulty to help the student avoid sudden changes in difficulty. Discusses analysis from the start of the book, to avoid unnecessary discussion on real numbers beyond what is immediately needed. Includes simplified and meaningful proofs. Features Exercises and Problems at the end of each chapter as well as Questions at the end of each section with answers at the end of each chapter. Presents analysis in a unified way as the mathematics based on inequalities, estimations, and approximations. --This text refers to an out of print or unavailable edition of this title.

This is an introductory text on real analysis that will prepare the reader well for further reading. The discussion is at a very elementary level, but no less useful for all that. Mattuck's sense of humor glimmers throughout the text ('Theorems are there to save work. Adults cite theorems.'); he was my

second-term lecturer in calculus at MIT, and the humor that was present in his quizzes is evident here. Highly recommended for someone who wants a gentler introduction to analysis than typically provided by books such as Rudin. I recommend also referring to Course 18.100A, Introduction to Analysis, on the MIT Open Courseware site, which uses this book.Mattuck's book will not cover some topics that are found in a more traditional analysis book such as the implicit function theorem, continuity defined in terms of open sets, Lebesgue integration (touched on only briefly here), and Stokes's Theorem. Nonetheless, a very useful text and a bargain at the price.Some reviewers have complained about the print quality, but I don't find that to be much of a problem.

Arthur Mattuck, along with Herb Gross, are the greatest math teachers ever. If you are using baby Rudin and having problems, this book is well worth the investment.

Great book, the appendix is really good

I was excited about a low cost book of the breadth suggested in the table of contents. The copy I received looked like it came of an old 9-pin dot matrix printer that was low on ink. It is horrible. There is no excuse for this low quality of printing. I have not yet read the book, but I suspect that I might not do so now as the print quality is too distracting. A pity.

Great book, finally a prof/publisher who doesn't rip off students with a $200 textbook, but the printing quality is pretty bad though.

This is a great book with excellent example problems. It also gives questions at the end of each section that are answered at the end of the chapter. This is a great book for self study.

Did not get yet to the apparently excellent contents, because I'm still furious that I paid for a paperback edition but got a lousy on-demand printed copy. This should be clearly stated at the selling page. Being of a certain age, I find it bothersome having to strain my sight in order to read such a pale printing. Not only did they spare on the ink: the print itself is fuzzy. If I still lived in the USA, I would most certainly return this.After some many dozens of books purchased via , this is the only one that got me disappointed.

Update:I didn't bother reordering this, but found a reasonably priced hard cover of the same text:

ISBN-10: 0130811327The quality of print is very high, as you would expect.Initial Review:I just opened the text and cannot believe at the low quality of print! It looks like it was produced on a cheap inkjet printer. The titles all have dots around them and the words look FUZZY! I can't believe anyone would ship such low quality printing.It bothers my eyes to read it. Yes. It has nothing to do with the material, but it is truly painful to read. It is possible that is a printing fluke, as another reviewer appears to have received a copy produced around the same time as mine.I'm going to request an exchange from and will delete this review if the next copy comes with reasonable printing.

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