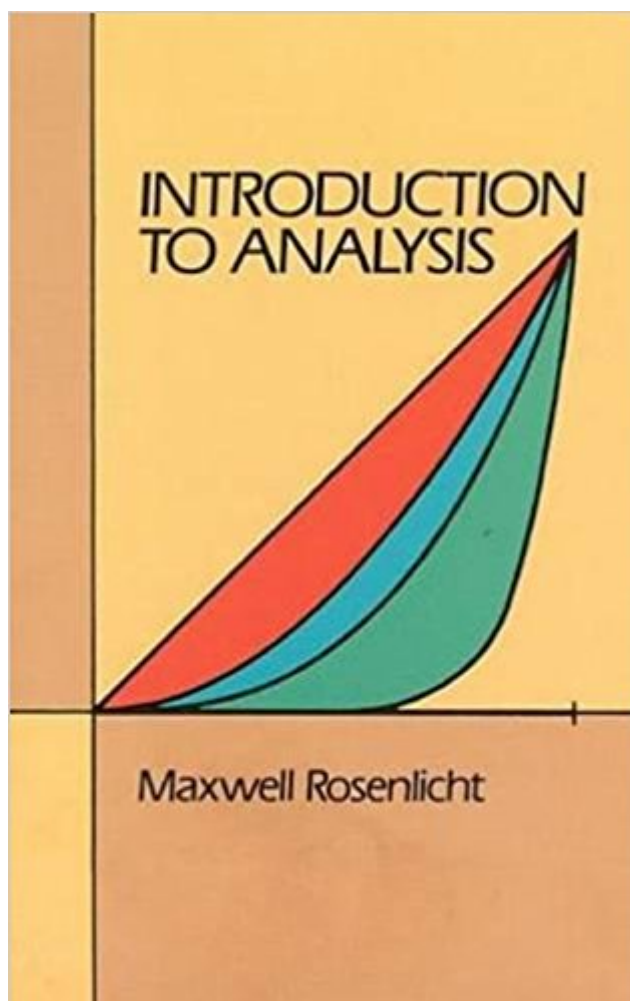# Introduction To Analysis (Dover Books On Mathematics)

Synopsis

This well-written text provides excellent instruction in basic real analysis, giving a solid foundation for direct entry into advanced work in such fields as complex analysis, differential equations, integration theory, and general topology. The nominal prerequisite is a year of calculus, but actually nothing is assumed other than the axioms of the real number system. Because of its clarity, simplicity of exposition, and stress on easier examples, this material is accessible to a wide range of students, of both mathematics and other fields.Chapter headings include notions from set theory, the real number system, metric spaces, continuous functions, differentiation, Riemann integration, interchange of limit operations, the method of successive approximations, partial differentiation, and multiple integrals.Following some introductory material on very basic set theory and the deduction of the most important properties of the real number system from its axioms, Professor Rosenlicht gets to the heart of the book: a rigorous and carefully presented discussion of metric spaces and continuous functions, including such topics as open and closed sets, limits and continuity, and convergent sequence of points and of functions. Subsequent chapters cover smoothly and efficiently the relevant aspects of elementary calculus together with several somewhat more advanced subjects, such as multivariable calculus and existence theorems. The exercises include both easy problems and more difficult ones, interesting examples and counter examples, and a number of more advanced results.Introduction to Analysis lends itself to a one- or two-quarter or one-semester course at the undergraduate level. It grew out of a course given at Berkeley since 1960. Refinement through extensive classroom use and the authorâ ™s pedagogical experience and expertise make it an unusually accessible introductory text.

Book Information

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Customer Reviews

This book was written for Berkeley Math 104 course almost 50 years. That it is still occasionally used for it (as it was this semester) suggests that it does get the job done, so to speak. I spoke to an old-timer member of the math faculty at Berkeley and they described it as "a good book, if a little too dry". There are things to like about this book. Its treatment of metric spaces so early and so extensively is refreshing. The material is presented clearly and if you're willing to take the time to push through it it's a well-crafted book. The exercises are a good mix of easy practice problems to mind-benders. I would not recommend trying to do all of the exercises in the book outside of the context of a course because they can be treacherously difficult. There are also some gaps in the coverage that might be due to its age and approach. For one, I don't think I saw a definition of closure, denseness, and a few other topics and the construction of the reals is very superficial. Still, the core ideas are communicated well. I'd probably recommend Pugh for something more complete and readable for an intro course but for the price I can't really complain about Rosenlicht.

I took intro to analysis my freshman year, and I bought this book to flesh out some of the stuff I was reading in Rudin: Principles of Mathematical Analysis, Third EditionHonestly, no analysis course is complete without Rudin, but Rosenlicht's book serves as a good companion. It is also written in much clearer prose, which certainly offsets the panic you get when reading Rudin for the first time. :PRelevant concepts are covered in the following order:1. The real numbers and their properties2. Metric spaces, basic topology, open and closed sets3. Compactness (kind of a big deal, especially later on)4. Sequences and series5. Continuous functions6. Differentiation

As someone who has taken courses in analysis and topology, this book helped me very much. I somehow managed to make it through with excellent grades without ever truly understanding what was going on. Out of my own curiosity to truly learn and understand I picked up a copy of this book. I now feel as though I really understand the importance of things like compactness, completeness, and so on. This book also helped me understand the connection between analysis and topology. It is an excellent book for someone with passing familiarity of concepts. The only problem I found was that there were no solutions in the back of the book. So, this may not be good for self-study.

However, it is still an interesting read.

While the exposition in this book is excellent - it is sometimes unreadable - especially problematic are the superscripts and subscripts. In Analysis the superscripts and subscripts are often important and there are a lot of them. Other text is also sometimes difficult to read - the type is generally "blotchy" - with the little spaces in many symbols filled in.

This book is exactly what it says it is, I didn't realize until I bought it though, that it's essentially glorified Calculus.

Clear, concise, superb!

The author, Dr. Rosenlicht, has done an excellent job on the textbook. The printing, however, is nearly unreadable. It is way too small, filling only 2/3 of the page, and is slightly blurry. This makes it exceedingly difficult to read things like subscripts.This is a great book nearly ruined by careless typesetting. I can not recommend this version of the book, unless you have a magnifying glass handy.

This is one of the best (if not the best) introduction to analysis I've read. If I have one criticism of some mathematical authors is that sometimes 'elegance' gets priority over explanation, and then 'mathematical maturity' becomes a requirement for introductory texts when it shouldn't really be the case. Rosenlicht's is a truly good Introduction to Analysis.

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