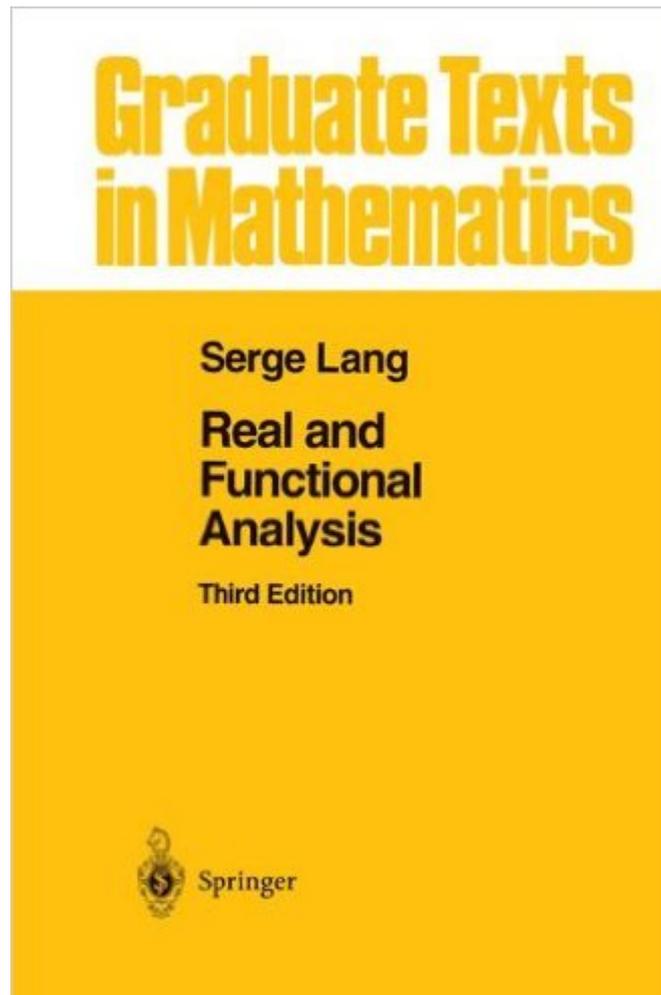# Real And Functional Analysis (Graduate Texts In Mathematics) (v. 142)

Synopsis

This book is meant as a text for a first-year graduate course in analysis. In a sense, it covers the same topics as elementary calculus but treats them in a manner suitable for people who will be using it in further mathematical investigations. The organization avoids long chains of logical interdependence, so that chapters are mostly independent. This allows a course to omit material from some chapters without compromising the exposition of material from later chapters.

Book Information

Series: Graduate Texts in Mathematics (Book 142)

Hardcover: 580 pages

Publisher: Springer; 3rd edition (April 29, 1993)

Language: English

ISBN-10: 0387940014

ISBN-13: 978-0387940014

Product Dimensions: 6.1 x 1.4 x 9.2 inches

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

Average Customer Review: 4.3 out of 5 stars See all reviews (7 customer reviews)

Best Sellers Rank: #590,050 in Books (See Top 100 in Books)   #120 in Books > Science & Math > Mathematics > Pure Mathematics > Functional Analysis   #461 in Books > Science & Math > Mathematics > Mathematical Analysis   #5551 in Books > Textbooks > Science & Mathematics > Mathematics

Customer Reviews

I've read through many analysis texts and in real analysis this is certainly among the very best. General integration and measure theory are covered in a self-contained way.. Recently I reviewed a real analysis text by Richard F Bass and found that some proofs on sigma algebras relied on the theorem that an open subset of R can be written as a countable union of disjoint open intervals (countable in the sense of finite or countably infinite). Lang accomplishes the same ends without direct use of this theorem, though you'll see the ideas which put together furnish a proof of this theorem peppered throughout the development.In years past I had the privilege of working through Lang's Algebra 2nd Ed. A proof of Zorn's Lemma via the Bourbaki Theorem is given in Appendix 2 to this text. This proof is essentially reproduced on pp.10-16 of the reviewed text. Most notable there were errors in the proof of Lemma 2.3 in the algebra text. This lemma is 3.3 in the reviewed text. It appears that a posthumous attempt was made by an editor to correct it. Go down to the line on p.15

where it reads "whence x is an upper bound for E whence" b less than or equal to x(not c), a contradiction since it was assumed x less than b. Now it's correct. So minor yet if you followed along you knew it was off and figured out the correction. Oh b an element of E does not follow here. What does follow is that for some c of E, x is less than or equal to c. I suspect Lang left the errors in purposely because it was a long chain of reasoning and this so strategically placed reinforced your understanding making you review the definitions. You'll see what I'm talking about when you read it.The other reviewers pretty much covered the content.

Real and Functional Analysis (Graduate Texts in Mathematics) (v. 142) Time-Dependent Density-Functional Theory: Concepts and Applications (Oxford Graduate Texts) Fourier Analysis on Number Fields (Graduate Texts in Mathematics) (v. 186) An Epsilon of Room Real Analysis: Pages from Year Three of a Mathematical Blog (Graduate Studies in Mathematics) Real Estate: Learn to Succeed the First Time: Real Estate Basics, Home Buying, Real Estate Investment & House Flipping (Real Estate income, investing, Rental Property) Real Mathematical Analysis (Undergraduate Texts in Mathematics) Measure and Category: A Survey of the Analogies between Topological and Measure Spaces (Graduate Texts in Mathematics) The Symmetric Group: Representations, Combinatorial Algorithms, and Symmetric Functions (Graduate Texts in Mathematics, Vol. 203) Lie Groups, Lie Algebras, and Representations: An Elementary Introduction (Graduate Texts in Mathematics) Graph Theory (Graduate Texts in Mathematics) Functions of One Complex Variable II (Graduate Texts in Mathematics, Vol. 159) Algebraic Geometry (Graduate Texts in Mathematics) Categories for the Working Mathematician (Graduate Texts in Mathematics) Commutative Algebra: with a View Toward Algebraic Geometry (Graduate Texts in Mathematics) A First Course in Modular Forms (Graduate Texts in Mathematics) Rational Homotopy Theory (Graduate Texts in Mathematics) The Geometry of Schemes (Graduate Texts in Mathematics) The Arithmetic of Elliptic Curves (Graduate Texts in Mathematics) Algebraic Geometry: A First Course (Graduate Texts in Mathematics) (v. 133) Introduction to Smooth Manifolds (Graduate Texts in Mathematics, Vol. 218)