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Autore	Kane Jonathan M
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Descrizione fisica	1 online resource (XX, 347 p. 79 illus., 4 illus. in color.)
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Soggetti	Functional analysis Fourier analysis Logic, Symbolic and mathematical Functional Analysis Fourier Analysis Mathematical Logic and Foundations
Lingua di pubblicazione	Inglese
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Note generali	Includes Index.
Nota di contenuto	What Are Proofs, And Why Do We Write Them? -- The Basics of Proofs -- Limits -- Continuity -- Derivatives -- Riemann Integrals -- Infinite Series -- Sequences of Functions -- Topology of the Real Line -- Metric Spaces .
Sommario/riassunto	This is a textbook on proof writing in the area of analysis, balancing a survey of the core concepts of mathematical proof with a tight, rigorous examination of the specific tools needed for an understanding of analysis. Instead of the standard "transition" approach to teaching proofs, wherein students are taught fundamentals of logic, given some common proof strategies such as mathematical induction, and presented with a series of well-written proofs to mimic, this textbook teaches what a student needs to be thinking about when trying to construct a proof. Covering the fundamentals of analysis sufficient for a typical beginning Real Analysis course, it never loses sight of the fact that its primary focus is about proof writing skills. This book aims to give the student precise training in the writing of proofs by explaining exactly what elements make up a correct proof, how one goes about constructing an acceptable proof, and, by learning to recognize a

correct proof, how to avoid writing incorrect proofs. To this end, all proofs presented in this text are preceded by detailed explanations describing the thought process one goes through when constructing the proof. Over 150 example proofs, templates, and axioms are presented alongside full-color diagrams to elucidate the topics at hand.