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Descrizione fisica	1 online resource (XIX, 350 p.)
Collana	Texts and Readings in Mathematics, , 2366-8717 ; ; 37
Disciplina	515
Soggetti	Mathematical analysis Analysis (Mathematics) Analysis
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes index.
Nota di contenuto	Chapter 1. Introduction -- Chapter 2. Starting at the beginning: the natural numbers -- Chapter 3. Set theory -- Chapter 4. Integers and rationals -- Chapter 5. The real numbers -- Chapter 6. Limits of sequences -- Chapter 7. Series -- Chapter 8. Infinite sets -- Chapter 9. Continuous functions on \mathbb{R} -- Chapter 10. Differentiation of functions -- Chapter 11. The Riemann integral. .
Sommario/riassunto	This is part one of a two-volume book on real analysis and is intended for senior undergraduate students of mathematics who have already been exposed to calculus. The emphasis is on rigour and foundations of analysis. Beginning with the construction of the number systems and set theory, the book discusses the basics of analysis (limits, series, continuity, differentiation, Riemann integration), through to power series, several variable calculus and Fourier analysis, and then finally the Lebesgue integral. These are almost entirely set in the concrete setting of the real line and Euclidean spaces, although there is some material on abstract metric and topological spaces. The book also has appendices on mathematical logic and the decimal system. The entire text (omitting some less central topics) can be taught in two quarters of 25–30 lectures each. The course material is deeply intertwined with the exercises, as it is intended that the student actively learn the material (and practice thinking and writing rigorously) by proving several of the key results in the theory. .

