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	Titolo	Fundamental Mathematical Analysis [[electronic resource] /] / by Robert Magnus
	Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2020
	ISBN	3-030-46321-4
	Edizione	[1st ed. 2020.]
	Descrizione fisica	1 online resource (XX, 433 p. 35 illus., 11 illus. in color.)
	Collana	Springer Undergraduate Mathematics Series, , 1615-2085
	Disciplina	515
	Soggetti	Functions of real variables
		Sequences (Mathematics)
		Mathematical analysis
		Analysis (Mathematics)
		Real Functions
		Sequences, Series, Summability
		Analysis
	Lingua di pubblicazione	Inglese
	Formato	Materiale a stampa
	Livello bibliografico	Monografia
	Note generali	Includes index.
	Nota di contenuto	1 Introduction -- 2 Real Numbers -- 3 Sequences and Series -- 4 Functions and Continuity -- 5 Derivatives and Differentiation -- 6 Integrals and Integration -- 7 The Elementary Transcendental Functions -- 8 The Techniques of Integration -- 9 Complex Numbers -- 10 Complex Sequences and Series -- 11 Function Sequences and Function Series -- 12 Improper Integrals -- Index.
	Sommario/riassunto	This textbook offers a comprehensive undergraduate course in real analysis in one variable. Taking the view that analysis can only be properly appreciated as a rigorous theory, the book recognises the difficulties that students experience when encountering this theory for the first time, carefully addressing them throughout. Historically, it was the precise description of real numbers and the correct definition of limit that placed analysis on a solid foundation. The book therefore begins with these crucial ideas and the fundamental notion of sequence. Infinite series are then introduced, followed by the key concept of continuity. These lay the groundwork for differential and

integral calculus, which are carefully covered in the following chapters. Pointers for further study are included throughout the book, and for the more adventurous there is a selection of "nuggets", exciting topics not commonly discussed at this level. Examples of nuggets include Newton's method, the irrationality of , Bernoulli numbers, and the Gamma function. Based on decades of teaching experience, this book is written with the undergraduate student in mind. A large number of exercises, many with hints, provide the practice necessary for learning, while the included "nuggets" provide opportunities to deepen understanding and broaden horizons.