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Autore	Muller Jurgen
Titolo	Concepts of Function Theory : Real and Complex Analysis of one Variable // by Jürgen Müller
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ISBN	9783662691151 9783662691144
Edizione	[1st ed. 2025.]
Descrizione fisica	1 online resource (467 pages)
Collana	Mathematics Study Resources, , 2731-3832 ; ; 12
Disciplina	515.8
Soggetti	Mathematical analysis Functions of complex variables Analysis Functions of a Complex Variable Anàlisi matemàtica Funcions de variables complexes Llibres electrònics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Rules of the Game: Sets, mappings, numbers -- Basics: Limits, elementary functions, and metric spaces -- Up and Down: Differentiation and integration; Magic Circles: Circular functions and local function theory -- Wonder Worlds: Global function theory -- Normal or Not: Conformal mappings and complex dynamics -- Extras: Runge theory and applications.
Sommario/riassunto	This textbook presents a direct path from real analysis of one variable to function theory. Classical topics of one-dimensional real analysis, such as differential and integral calculus, are largely presented from a complex perspective. The goal is a self-contained exposition extending to the Runge theorems and the dynamics of entire functions. Short sections appended to each chapter on concepts of function theory provide glimpses into higher-dimensional analysis and an impression of its universal significance for mathematics. The book is structured so that parts can also serve as a basis for a seminar. Thus, this fascinating

area of mathematics becomes accessible to students whose programs do not focus on mathematics and for whom a classical introduction to function theory would be too time-consuming. This book enables them to take a step into complex analysis, through which they can recognize a multitude of connections that remain hidden in real analysis. The Author Prof. Dr. Jürgen Müller is a lecturer in the Department of Mathematics at the University of Trier. He conducts research in the field of complex analysis of one variable, focusing particularly on approximation in the complex domain. His motivation for writing this textbook stemmed from the idea of demonstrating a direct approach to function theory from the fundamentals of analysis, thereby enabling an immediate entry into the theory. The translation was done with the help of artificial intelligence. A subsequent human revision was done primarily in terms of content. This book is a translation of an original German edition. The translation was done with the help of artificial intelligence (machine translation by the service DeepL.com). A subsequent human revision was done primarily in terms of content, so that the book will read stylistically differently from a conventional translation.
