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Titolo	100+1 Problems in Advanced Calculus : A Creative Journey through the Fjords of Mathematical Analysis for Beginners / / by Paolo Toni, Pier Domenico Lamberti, Giacomo Drago
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Collana	Problem Books in Mathematics, , 2197-8506
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Soggetti	Functions of real variables Mathematical analysis Real Functions Analysis
Lingua di pubblicazione	Inglese
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Nota di contenuto	Summary of basic theory of inequalities -- Sets, sequences, functions -- Limits of functions, continuity -- Differentiation -- Classical theorems of differential calculus -- Monotonicity, concavity, minima, maxima, inflection points -- Graphs of functions -- Integrals.
Sommario/riassunto	This book convenes a collection of carefully selected problems in mathematical analysis, crafted to achieve maximum synergy between analytic geometry and algebra and favoring mathematical creativity in contrast to mere repetitive techniques. With eight chapters, this work guides the student through the basic principles of the subject, with a level of complexity that requires good use of imagination. In this work, all the fundamental concepts seen in a first-year Calculus course are covered. Problems touch on topics like inequalities, elementary point-set topology, limits of real-valued functions, differentiation, classical theorems of differential calculus (Rolle, Lagrange, Cauchy, and l’ Hospital), graphs of functions, and Riemann integrals and antiderivatives. Every chapter starts with a theoretical background, in which relevant definitions and theorems are provided; then, related

problems are presented. Formalism is kept at a minimum, and solutions can be found atthe end of each chapter. Instructors and students of Mathematical Analysis, Calculus and Advanced Calculus aimed at first-year undergraduates in Mathematics, Physics and Engineering courses can greatly benefit from this book, which can also serve as a rich supplement to any traditional textbook on these subjects as well.