

Marian Mureşan
A Concrete Approach to Classical Analysis

Ouvrages de mathématiques de la SMC

Mathematical analysis offers a solid basis for many achievements in applied mathematics and discrete mathematics. This new textbook is focused on differential and integral calculus, and includes a wealth of useful and relevant examples, exercises, and results enlightening the reader to the power of mathematical tools. The intended audience consists of advanced undergraduates studying mathematics or computer science.



The author provides excursions from the standard topics to modern and exciting topics, to illustrate the fact that even first or second year students can understand certain research problems.

The text has been divided into ten chapters and covers topics on sets and numbers, linear spaces and metric spaces, sequences and series of numbers and of functions, limits and continuity, differential and integral calculus of functions of one or several variables, constants (mainly pi) and algorithms for finding them, the W–Z method of summation, estimates of algorithms and of certain combinatorial problems. Many challenging exercises accompany the text. Most of them have been used to prepare for different mathematical competitions during the past few years. In this respect, the author has maintained a healthy balance of theory and exercises.



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CMS Books in Mathematics

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$$\frac{f_{n,k}}{n!} \sim \frac{1}{k(k+1)l_k^{n+1}}, \quad n \rightarrow \infty$$
$$f_{n,k} \sim \frac{n!}{k(k+1)l_k^{n+1}}, \quad k \rightarrow \infty$$



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