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Nota di contenuto	1. Introduction to asymptotics -- 2. Asymptotics of integrals -- 3. Speeding up convergence -- 4. Differential equations -- 5. Asymptotic series solutions for differential equations -- 6. Difference equations -- 7. Perturbation theory -- 8. WKB theory -- 9. Multiple-scale analysis.
Sommario/riassunto	Beneficial to both beginning students and researchers, Asymptotic Analysis and Perturbation Theory immediately introduces asymptotic notation and then applies this tool to familiar problems, including limits, inverse functions, and integrals. Suitable for those who have completed the standard calculus sequence, the book assumes no prior knowledge of differential equations. It explains the exact solution of only the simplest differential equations, such as first-order linear and separable equations. With varying levels of problems in each section, this self-contained text makes the difficult subject of asymptotics easy to comprehend. Along the way, it explores the properties of some important functions in applied mathematics. Although the book emphasizes problem solving, some proofs are scattered throughout to give readers a justification for the methods used.