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Nota di contenuto	VIII Cauchy Theory -- IX Multivariate Differential and Integral Calculus -- X The Riemann Surface of an Algebraic Function.
Sommario/riassunto	Volume III sets out classical Cauchy theory. It is much more geared towards its innumerable applications than towards a more or less complete theory of analytic functions. Cauchy-type curvilinear integrals are then shown to generalize to any number of real variables (differential forms, Stokes-type formulas). The fundamentals of the theory of manifolds are then presented, mainly to provide the reader with a "canonical" language and with some important theorems (change of variables in integration, differential equations). A final chapter shows how these theorems can be used to construct the compact Riemann surface of an algebraic function, a subject that is rarely addressed in the general literature though it only requires elementary techniques. Besides the Lebesgue integral, Volume IV will set out a piece of specialized mathematics towards which the entire content of the previous volumes will converge: Jacobi, Riemann, Dedekind series and infinite products, elliptic functions, classical theory of modular functions and its modern version using the structure of the Lie algebra of SL(2,R).