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Sommario/riassunto	Addressing researchers and graduate students in the active meeting ground of analysis, geometry, and dynamics, this book presents a study of renormalization of quadratic polynomials and a rapid introduction to techniques in complex dynamics. Its central concern is the structure of an infinitely renormalizable quadratic polynomial f(z) = z2 + c. As discovered by Feigenbaum, such a mapping exhibits a repetition of form at infinitely many scales. Drawing on universal estimates in hyperbolic geometry, this work gives an analysis of the limiting forms that can occur and develops a rigidity criterion for the polynomial f. This criterion supports general conjectures about the

behavior of rational maps and the structure of the Mandelbrot set. The course of the main argument entails many facets of modern complex dynamics. Included are foundational results in geometric function theory, quasiconformal mappings, and hyperbolic geometry. Most of the tools are discussed in the setting of general polynomials and rational maps.