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Existence Argument -- Part IV Geometry -- Introduction -- Extension of Functional Equations -- Remarks on Penrose Tilings -- Distances in Convex Polygons -- Unexpected Applications of Polynomials in Combinatorics -- The Number of Homothetic Subsets -- On Lipschitz Mappings Onto a Square -- A Remark on Transversal Numbers -- In Praise of the Gram Matrix -- On Mutually Avoiding Sets -- Bibliography.

Sommario/riassunto

This is the most comprehensive survey of the mathematical life of the legendary Paul Erds (1913-1996), one of the most versatile and prolific mathematicians of our time. For the first time, all the main areas of Erds' research are covered in a single project. Because of overwhelming response from the mathematical community, the project now occupies over 1000 pages, arranged into two volumes. These volumes contain both high level research articles as well as key articles that survey some of the cornerstones of Erds' work, each written by a leading world specialist in the field. A special chapter "Early Days", rare photographs, and art related to Erds complement this striking collection. A unique contribution is the bibliography on Erds' publications: the most comprehensive ever published. This new edition, dedicated to the 100th anniversary of Paul Erds' birth, contains updates on many of the articles from the two volumes of the first edition, several new articles from prominent mathematicians, a new introduction, more biographical information about Paul Erds, and an updated list of publications. The first volume contains the unique chapter "Early Days", which features personal memories of Paul Erds by a number of his colleagues. The other three chapters cover number theory, random methods, and geometry. All of these chapters are essentially updated, most notably the geometry chapter that covers the recent solution of the problem on the number of distinct distances in finite planar sets, which was the most popular of Erds' favorite geometry problems.