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Sommario/riassunto	This book collects and explains the many theorems concerning the existence of certificates of positivity for polynomials that are positive globally or on semialgebraic sets. A certificate of positivity for a real polynomial is an algebraic identity that gives an immediate proof of a positivity condition for the polynomial. Certificates of positivity have their roots in fundamental work of David Hilbert from the late 19th century on positive polynomials and sums of squares. Because of the numerous applications of certificates of positivity in mathematics,

applied mathematics, engineering, and other fields, it is desirable to have methods for finding, describing, and characterizing them. For many of the topics covered in this book, appropriate algorithms, computational methods, and applications are discussed. This volume contains a comprehensive, accessible, up-to-date treatment of certificates of positivity, written by an expert in the field. It provides an overview of both the theory and computational aspects of the subject, and includes many of the recent and exciting developments in the area. Background information is given so that beginning graduate students and researchers who are not specialists can learn about this fascinating subject. Furthermore, researchers who work on certificates of positivity or use them in applications will find this a useful reference for their work.