

1. Record Nr.	UNINA9910300251603321
Autore	Hazrat Roozbeh
Titolo	Mathematica®: A Problem-Centered Approach // by Roozbeh Hazrat
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2015
ISBN	3-319-27585-2
Edizione	[2nd ed. 2015.]
Descrizione fisica	1 online resource (XIX, 318 p. 164 illus., 25 illus. in color.)
Collana	Springer Undergraduate Mathematics Series, , 2197-4144
Disciplina	510.285536
Soggetti	Computer science - Mathematics Computer software Compilers (Computer programs) Symbolic and Algebraic Manipulation Mathematical Software Compilers and Interpreters
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Bibliographic Level Mode of Issuance: Monograph
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Introduction -- Basics -- Defining functions -- Lists -- Changing heads! -- A bit of logic and set theory -- Sums and products -- Loops and repetitions -- Substitutions, Mathematica rules -- Pattern matching -- Functions with multiple definitions -- Recursive functions -- Linear algebra -- Graphics -- Calculus and equations -- Worked out projects -- Projects -- Solutions to the Exercises -- Further reading -- Bibliography -- Index.
Sommario/riassunto	This textbook introduces the vast array of features and powerful mathematical functions of Mathematica using a multitude of clearly presented examples and worked-out problems. Each section starts with a description of a new topic and some basic examples. The author then demonstrates the use of new commands through three categories of problems - the first category highlights those essential parts of the text that demonstrate the use of new commands in Mathematica whilst solving each problem presented; - the second comprises problems that further demonstrate the use of commands previously introduced to tackle different situations; and - the third presents more challenging problems for further study. The intention is to enable the reader to

learn from the codes, thus avoiding long and exhausting explanations. While based on a computer algebra course taught to undergraduate students of mathematics, science, engineering and finance, the book also includes chapters on calculus and solving equations, and graphics, thus covering all the basic topics in Mathematica. With its strong focus upon programming and problem solving, and an emphasis on using numerical problems that do not need any particular background in mathematics, this book is also ideal for self-study and as an introduction to researchers who wish to use Mathematica as a computational tool. This new edition has been extensively revised and updated, and includes new chapters with problems and worked examples.
