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| Nota di contenuto | AN ENGINEER'S GUIDE TO MATHEMATICA®; Contents; Preface; Table of |
|  | Engineering Applications; Part I Introduction; 1 Mathematica® |
|  | Environment and Basic Syntax; 1.1 Introduction; 1.2 Selecting Notebook |
|  | Characteristics; 1.3 Notebook Cells; 1.4 Delimiters; 1.5 Basic Syntax; |
|  | 1.5.1 Introduction; 1.5.2 Templates: Greek Symbols and Mathematical |
|  | Notation; 1.5.3 Variable Names and Global Variables; 1.6 Mathematical |
|  | Constants; 1.7 Complex Numbers; 1.8 Elementary, Trigonometric, |
|  | Hyperbolic, and a Few Special Functions; 1.9 Strings; 1.9.1 String |
|  | Creation: StringJoin[] and ToString[] |
|  | 1.9.2 Labeled Output: Print[], NumberForm[], EngineeringForm[], and |
|  | TraditionalForm[]1.10 Conversions, Relational Operators, and |
|  | Transformation Rule; 1.11 Engineering Units and Unit Conversions: |
|  | Quantity[] and UnitConvert[]; 1.12 Creation of CDF Documents and |
|  | Documents in Other Formats; 1.13 Functions Introduced in Chapter; |
|  | Exercises; 2 List Creation and Manipulation: Vectors and Matrices; 2.1 |
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|  | Creating a List with Table[]; 2.2.3 Summing Elements of a List: Totall]; |
|  | 2.2.4 Selecting Elements of a List |
|  | 2.2.5 Identifying List Elements Matching a Pattern: Position[]2.3 |
|  | Creating Matrices; 2.3.1 Introduction; 2.3.2 Matrix Generation Using |

Table[]; 2.3.3 Accessing Elements of Arrays; 2.4 Matrix Operations on Vectors and Arrays; 2.4.1 Introduction; 2.4.2 Matrix Inverse and Determinant: Inverse[] and Det[]; 2.5 Solution of a Linear System of Equations: LinearSolve[]; 2.6 Eigenvalues and Eigenvectors: EigenSystem []; 2.7 Functions Introduced in Chapter 2; References; Exercises; 3 User-Created Functions, Repetitive Operations, and Conditionals; 3.1 Introduction
3.2 Expressions and Procedures as Functions3.2.1 Introduction; 3.2.2 Pure Function: Function[]; 3.2.3 Module[]; 3.3 Find Elements of a List that Meet a Criterion: Select[]; 3.4 Conditionals; 3.4.1 If[]; 3.4.2 Which[]; 3.5 Repetitive Operations; 3.5.1 Do[]; 3.5.2 While[]; 3.5.3 Nest[]; 3.5.4 Map[]; 3.6 Examples of Repetitive Operations and Conditionals; 3.7 Functions Introduced in Chapter; Exercises; 4 Symbolic Operations; 4.1 Introduction; 4.2 Assumption Options; 4.3 Solutions of Equations: Solve []; 4.4 Limits: Limit[]; 4.5 Power Series: Series[], Coefficient[], and CoefficientList[]
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Sommario/riassunto Provides the tools for the reader to generate Mathematica $®$ programs to obtain numerical solutions to a wide range of engineering topics An Engineer's Guide to Mathematica® provides the tools to be able to generate verifiably correct Mathematica $®$ programs that obtain symbolic and numerical solutions to a wide range of engineering topics, and to display the numerical results with annotated graphics and, when appropriate, interactive graphics. The first part of the book introduces the fundamentals of Mathematica's syntax and a subset of commands useful in solving eng

