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types; 2.5.3 Arithmetic operators; 2.5.4 Operator precedence; 2.5.5 The colon operator; 2.5.6 The transpose operator; 2.5.7 Arithmetic operations on arrays; 2.5.8 Expressions; 2.5.9 Statements; 2.5.10 Statements, commands, and functions; 2.5.11 Formula vectorization; 2.6 Output; 2.6.1 The disp statement; 2.6.2 The format command; 2.6.3 Scale factors; 2.7 Repeating with for; 2.7.1 Square roots with Newton's method; 2.7.2 Factorials!; 2.7.3 Limit of a sequence; 2.7.4 The basic for construct; 2.7.5 for in a single line 2.7.6 More general for 2.7.7 Avoid for loops by vectorizing!; 2.8 Decisions; 2.8.1 The one-line if statement; 2.8.2 The if-else construct; 2.8.3 The one-line if-else statement; 2.8.4 elseif; 2.8.5 Logical operators; 2.8.6 Multiple ifs versus elseif; 2.8.7 Nested ifs; 2.8.8 Vectorizing ifs?; 2.8.9 The switch statement; 2.9 Complex numbers; Summary; Chapter exercises; 3 Program Design and Algorithm Development; 3.1 The program design process; 3.1.1 The projectile problem; 3.2 Programming MATLAB functions; 3.2.1 Inline objects: harmonic oscillators; 3.2.2 MATLAB function: $y = f(x)$; Summary Chapter exercises 4 MATLAB Functions and Data Import-Export Utilities; 4.1 Common functions; 4.2 Importing and exporting data; 4.2.1 The load and save commands; 4.2.2 Exporting text (ASCII) data; 4.2.3 Importing text (ASCII) data; 4.2.4 Exporting binary data; 4.2.4.1 Importing binary data; Summary; Chapter exercises; 5 Logical vectors; 5.1 Examples; 5.1.1 Discontinuous graphs; 5.1.2 Avoiding division by zero; 5.1.3 Avoiding infinity; 5.1.4 Counting random numbers; 5.1.5 Rolling dice; 5.2 Logical operators; 5.2.1 Operator precedence; 5.2.2 Danger; 5.2.3 Logical operators and vectors 5.3 Subscripting with logical vectors

Sommario/riassunto

The fifth edition of Essential MATLAB for Engineers and Scientists provides a concise, balanced overview of MATLAB's functionality that facilitates independent learning, with coverage of both the fundamentals and applications. The essentials of MATLAB are illustrated throughout, featuring complete coverage of the software's windows and menus. Program design and algorithm development are presented clearly and intuitively, along with many examples from a wide range of familiar scientific and engineering areas. This is an ideal book for a first course on MATLAB or for an engine
