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Nota di contenuto	Introduction -- Vectors and Vector Operations -- Matrices and Matrix Operations -- Linear Equations -- Ordinary Differential Equations -- Nonlinear Problems -- Advanced Plotting -- Appendix A MATLAB Resources -- Appendix B Supplemental Material.
Sommario/riassunto	This book introduces MATLAB as a direct problem-solving tool, where the many built-in functions and commands of MATLAB can be used to perform even complex tasks. In this mode MATLAB acts as a very advanced scientific calculator. The primary purpose of this book is to teach the reader how to use the functions and commands of this calculator and, when necessary, how to save the problem-solving steps so that the solution obtained can be re-used or re-evaluated under

different conditions. The book also introduces symbolic calculations extensively in addition to the traditional numerical methods found in other texts. MATLAB was initially introduced as a numerical tool for linear algebra problems and over the years has extended those numerical capabilities significantly to many areas of science and engineering. Consequently, it is not surprising that most books retain a strong emphasis on numerical solutions and treat symbolic calculations only briefly, if at all. A key point is that while symbolic algebra can be used to solve problems symbolically, it can also be used to make the formulation of problems much simpler, even if the ultimate solution is found numerically. Recognizing and demonstrating this important property of symbolic calculations is unique to this book. Examines symbolic and numeric MATLAB tools with examples: linear/ nonlinear/ differential equations, eigenvalue problems; Provides the reader with the MATLAB background needed to use MATLAB interactively (without traditional programming); Targets engineering students with examples and exercises taken from problems found in the engineering curriculum.