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Nota di contenuto	<p>""Contents at a Glance""; ""Contents""; ""About the Author""; ""Chapter 1: Introduction and the MATLAB Environment""; ""1.1 Numerical Computation with MATLAB""; ""1.2 Symbolic Computation with MATLAB""; ""1.3 MATLAB and Maple""; ""1.4 Graphics with MATLAB""; ""1.5 Environment and General Notation""; ""1.6 Help with Commands""; ""1.7 Commands to Exit and Escape to the MS-DOS Environment""; ""1.8 MATLAB and Programming""; ""Chapter 2: Limits and Continuity. One and Several Variables""; ""2.1 Limits of Sequences""; ""2.2 Limits of Functions. Lateral Limits""; ""2.3 Sequences of Functions""</p> <p>""4.1 The Concept of the Derivative""""4.2 Calculating Derivatives""; ""4.3 Tangents, Asymptotes, Concavity, Convexity, Maxima and Minima, Inflection Points and Growth""; ""4.4 Applications to Practical Problems""; ""4.5 Partial Derivatives""; ""4.6 Implicit Differentiation""; ""4.7 Differentiation of Functions of Several Variables""; ""4.8 Maxima and Minima of Functions of Several Variables""; ""4.9 Conditional Minima and Maxima. The Method of a€œLagrange Multipliersa€?""; ""4.10 Some Applications of Maxima and Minima in Several Variables""</p> <p>""Chapter 5: Vector Differential Calculus and Theorems in Several Variables""""5.1 Concepts of Vector Differential Calculus""; ""5.2 The</p>

Chain Rule"; "5.3 The Implicit Function Theorem"; "5.4 The Inverse Function Theorem"; "5.5 The Change of Variables Theorem"; "5.6 Taylor's Theorem with n Variables"; "5.7 Vector Fields. Curl, Divergence and the Laplacian"; "5.8 Coordinate Transformation"; "Chapter 6: Integration and Applications"; "6.1 Indefinite Integrals"; "6.2 Integration by Substitution (or Change of Variables)"; "6.3 Integration by Parts"; "6.4 Integration by Reduction and Cyclic Integration"; "6.5 Definite Integrals"; "6.6 Curve Arc Length"; "6.7 The Area Enclosed between Curves"; "6.8 Surfaces of Revolution"; "6.9 Volumes of Revolution"; "6.10 Curvilinear Integrals"; "6.11 Approximate Numerical Integration"; "6.12 Improper Integrals"; "6.13 Parameter Dependent Integrals"; "6.14 The Riemann Integral"; "Chapter 7: Integration in Several Variables and Applications"; "7.1 Areas and Double Integrals"; "7.2 Surface Area by Double Integration"; "7.3 Volume Calculation by Double Integrals"; "7.4 Volume Calculation and Triple Integrals"

Sommario/riassunto

MATLAB is a high-level language and environment for numerical computation, visualization, and programming. Using MATLAB, you can analyze data, develop algorithms, and create models and applications. The language, tools, and built-in math functions enable you to explore multiple approaches and reach a solution faster than with spreadsheets or traditional programming languages, such as C/C++ or Java. MATLAB Differential and Integral Calculus introduces you to the MATLAB language with practical hands-on instructions and results, allowing you to quickly achieve your goals. In addition to giving a short introduction to the MATLAB environment and MATLAB programming, this book provides all the material needed to work with ease in differential and integral calculus in one and several variables. Among other core topics of calculus, you will use MATLAB to investigate convergence, find limits of sequences and series and, for the purpose of exploring continuity, limits of functions. Various kinds of local approximations of functions are introduced, including Taylor and Laurent series. Symbolic and numerical techniques of differentiation and integration are covered with numerous examples, including applications to finding maxima and minima, areas, arc lengths, surface areas and volumes. You will also see how MATLAB can be used to solve problems in vector calculus and how to solve differential and difference equations.
