

1. Record Nr.	UNINA9910300466703321
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Titolo	MATLAB Symbolic Algebra and Calculus Tools / / by Cesar Lopez
Pubbl/distr/stampa	Berkeley, CA : , : Apress : , : Imprint : Apress, , 2014
ISBN	9781484203439 1484203437
Edizione	[1st ed. 2014.]
Descrizione fisica	1 online resource (254 p.)
Collana	MATLAB Solutions Series
Disciplina	004 510
Soggetti	Programming languages (Electronic computers) Computer software Programming Languages, Compilers, Interpreters Mathematical Software
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di contenuto	<p>""MATLAB Symbolic Algebra and Calculus Tools""; ""Contents at a Glance""; ""Contents""; ""About the Author""; ""Chapter 1: Symbolic Variables and Functions""; ""1-1. Symbolic Variables""; ""1-2. Symbolic Vector Variables""; ""1-3. Symbolic Matrix Variables""; ""1-4. Character Variables""; ""1-5. Logic Functions""; ""1-6. Elementary Functions That Support Complex Symbolic Matrices as Arguments""; ""1-7. Symbolic Functions of Several Variables""; ""1-8. Functions of Single Variables""; ""Chapter 2: Algebraic Expressions and Operations: Factoring Algebraic Fractions""</p> <p>""2-1. Expansion of Algebraic Expressions""""2-2. Factoring Expressions over Fields and their Algebraic Extensions""; ""2-3. Simplifying Algebraic Expressions""; ""2-4. Combining Algebraic Expressions""; ""2-5. Grouping of Similar Terms in Algebraic Expressions""; ""2-6. Sorting Terms in Algebraic Expressions""; ""2-7. Algebraic Fractions""; ""2-8. Transforming Algebraic Expressions by Conversion""; ""2-9. Subexpressions and Parts of Expressions""; ""Chapter 3: Polynomial Divisibility, Interpolation, and Algebraic Extensions""; ""3-1. Commands for Handling Polynomial Expressions""</p> <p>""4-4. Eigenvalues and Eigenvectors: Diagonalization""""4-5. Matrix</p>

Decomposition"; "4-6. Similar Matrices and Diagonalization"; "4-7. Sparse Matrices"; "4-8. Special Numeric and Symbolic Matrices"; "Chapter 5: Equations and Systems"; "5-1. Special Commands"; "Chapter 6: Series, Continuity, Derivatives, Integrals and Differential Equations"; "6-1. Predefined Symbolic Functions"; "6-2. Functions for Mathematical Analysis: Limits, Continuity and Series"; "6-3. Derivatives, Integrals and Differential Equations"

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## 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 Symbolic Algebra and Calculus Tools introduces you to the MATLAB language with practical hands-on instructions and results, allowing you to quickly achieve your goals. Starting with a look at symbolic variables and functions, you will learn how to solve equations in MATLAB, both symbolically and numerically, and how to simplify the results. Extensive coverage of polynomial solutions, inequalities and systems of equations are covered in detail. You will see how MATLAB incorporates vector, matrix and character variables, and functions thereof. MATLAB is a powerful symbolic manipulator which enables you to factorize, expand and simplify complex algebraic expressions over all common fields (including over finite fields and algebraic field extensions of the rational numbers). With MATLAB you can also work with ease in matrix algebra, making use of commands which allow you to find eigenvalues, eigenvectors, determinants, norms and various matrix decompositions, among many other features. Lastly, you will see how you can use MATLAB to explore mathematical analysis, finding limits of sequences and functions, sums of series, integrals, derivatives and solving differential equation.

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