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Altri autori (Persone)	CastilloEnrique <1946->
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Nota di contenuto	Orthogonal Sets and Polar Methods in Linear Algebra: Applications to Matrix Calculations, Systems of Equations, Inequalities, and Linear Programming; Contents; Part I Linear Spaces and Systems of Equations; 1 Basic Concepts; 1.1 Introduction; 1.2 Linear space; 1.3 The Euclidean Space En; 1.4 Orthogonal Sets and Decompositions; 1.5 Matrices; 1.6 Systems of Linear Equations; Exercises; 2 Orthogonal Sets; 2.1 Introduction and Motivation; 2.2 Orthogonal Decompositions; 2.3 The Orthogonalization Module; 2.4 Mathematica Program; Exercises; 3 Matrix Calculations Using Orthogonal Sets 3.1 Introduction3.2 Inverting a Matrix; 3.3 The Rank of a Matrix; 3.4 Calculating the Determinant of a Matrix; 3.5 Algorithm for Matrix Calculations; 3.6 Complexity; 3.7 Inverses and Determinants of Row-Modified Matrices; 3.8 Inverses of Symbolic Matrices; 3.9 Extensions to Partitioned Matrices; 3.10 Inverses of Modified Matrices; 3.11 Mathematica Programs; Exercises; 4 More Applications of Orthogonal Sets; 4.1 Intersection of Two Linear Subspaces; 4.2 Reciprocals Images in Linear Transformations; 4.3 Other Applications; 4.4 Mathematica Programs; Exercises

5 Orthogonal Sets and Systems of Linear Equations 5.1 Introduction; 5.2 Compatibility of a System of Linear Equations; 5.3 Solving a System of Linear Equations; 5.4 Complexity; 5.5 Checking Systems Equivalence; 5.6 Solving a System in Some Selected Variables; 5.7 Modifying Systems of Equations; 5.8 Applications; 5.9 Mathematica Programs; Exercises; Appendix: Proof of Lemma 5.2; Part II Cones and Systems of Inequalities; 6 Polyhedral Convex Cones; 6.1 Introduction; 6.2 Convex Sets; 6.3 Types of Linear Combinations; 6.4 Polyhedral Convex Cones; 6.5 The  $\epsilon$ -Process; 6.6 The Complete  $\epsilon$ -Algorithm; 6.7 Mathematica Program Exercises; 7 Polytopes and Polyhedra; 7.1 Introduction; 7.2 Polytopes; 7.3 Polyhedra; Exercises; 8 Cones and Systems of Inequalities; 8.1 Introduction; 8.2 A Discussion of Linear Systems; 8.3 Solving Linear Systems; 8.4 Applications to Linear Programming; Exercises; Part III Linear Programming; 9 An Introduction to Linear Programming; 9.1 Introduction; 9.2 Problem Statement and Basic Definitions; 9.3 Linear Programming Problem in Standard Form; 9.4 Basic Solutions; 9.5 Duality; Exercises; 10 The Exterior Point Method; 10.1 Introduction; 10.2 The Exterior Point Method; 10.3 Making the EPM More Efficient; 10.4 Complexity; 10.5 Recovering the Final Tableau from the Solution; 10.6 Modifying a Linear Programming Problem; Exercises; Part IV Applications; 11 Applications; 11.1 Introduction; 11.2 Matrix Analysis of Engineering Structures; 11.3 The Transportation Problem; 11.4 Production-Scheduling Problems; 11.5 The Input-Output Tables; 11.6 The Diet Problem; 11.7 Network Flow Problems; Exercises; Part V Appendices; Appendix A: A Java Application; A.1 How to Use the Program; Appendix B: List of Notation; References; Index

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#### Sommario/riassunto

A unique, applied approach to problem solving in linear algebra. Departing from the standard methods of analysis, this unique book presents methodologies and algorithms based on the concept of orthogonality and demonstrates their application to both standard and novel problems in linear algebra. Covering basic theory of linear systems, linear inequalities, and linear programming, it focuses on elegant, computationally simple solutions to real-world physical, economic, and engineering problems. The authors clearly explain the reasons behind the analysis of different structures and concepts.

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2. Record Nr.	UNICAMPANIAVAN00004253
Autore	Steccanella, Maurizio
Titolo	La legge quadro in materia di lavori pubblici : Legge 11-2-1994, n. 109 / Maurizio Steccanella, Enzo Robaldo
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