

1. Record Nr.	UNINA9911019739103321
Autore	Baker Kenneth R. <1943->
Titolo	Optimization modeling with spreadsheets / / Kenneth R. Baker
Pubbl/distr/stampa	Hoboken, N.J., : Wiley, 2011
ISBN	9786613678041 9781118008973 1118008979 9781280767272 1280767278 9780470949108 0470949104 9780470949092 0470949090
Edizione	[2nd ed.]
Descrizione fisica	1 online resource (431 p.)
Disciplina	005.54 519.6028554
Soggetti	Mathematical optimization Managerial economics - Mathematical models Electronic spreadsheets Programming (Mathematics)
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	CONTENTS; Preface; 1. Introduction to Spreadsheet Models for Optimization; 1.1 Elements of a Model; 1.2 Spreadsheet Models; 1.3 A Hierarchy for Analysis; 1.4 Optimization Software; 1.5 Using Solver; Summary; Exercises; References; 2. Linear Programming: Allocation, Covering, and Blending Models; 2.1 Linear Models; 2.1.1 Linear Constraints; 2.1.2 Formulation; 2.1.3 Layout; 2.1.4 Results; 2.2 Allocation Models; 2.2.1 The Product Mix Problem; 2.3 Covering Models; 2.3.1 The Staff-Scheduling Problem; 2.4 Blending Models; 2.5 Modeling Errors in Linear Programming; 2.5.1 Exceptions; 2.5.2 Debugging 2.5.3 LogicSummary; Exercises; Case: JetGreen; 3. Linear Programming:

Network Models; 3.1 The Transportation Model; 3.2 The Assignment Model; 3.3 The Transshipment Model; 3.4 Features of Special Network Models; 3.5 Building Network Models with Balance Equations; 3.6 General Network Models with Yields; 3.6.1 Models with Yield Losses; 3.6.2 Models with Yield Gains; 3.7 General Network Models with Transformed Flows; Summary; Exercises; Case: Casey's Famous Roast Beef; Case: Hollingsworth Paper Company; Production and Distribution Facilities; Patterns of Distribution; Expansion Proposals

4. Sensitivity Analysis in Linear Programs 4.1 Parameter Analysis in the Transportation Example; 4.2 Parameter Analysis in the Allocation Example; 4.3 The Sensitivity Report and the Transportation Example; 4.4 The Sensitivity Report and the Allocation Example; 4.5 Degeneracy and Alternative Optima; 4.6 Patterns in Linear Programming Solutions; 4.6.1 The Transportation Model; 4.6.2 The Product Portfolio Model; 4.6.3 The Investment Model; 4.6.4 The Allocation Model; 4.6.5 The Refinery Model; Summary; Exercises; Case: Cox Cable and Wire Company; Background; The Contract; The Analysis

5. Linear Programming: Data Envelopment Analysis 5.1 A Graphical Perspective on DEA; 5.2 An Algebraic Perspective on DEA; 5.3 A Spreadsheet Model for DEA; 5.4 Indexing; 5.5 Finding Reference Sets and HCUs; 5.6 Assumptions and Limitations of DEA; Summary; Exercises; Case: Branch Performance at Nashville National Bank; Branch Growth at Nashville National Bank; Assessing Branch Productivity; Branch Managers Revolt; Measuring Branches: Available Techniques; The DEA Study; 6. Integer Programming: Binary Choice Models; 6.1 Using Solver with Integer Requirements; 6.2 The Capital Budgeting Problem

6.3 Set Covering 6.4 Set Packing; 6.5 Set Partitioning; 6.6 Playoff Scheduling; 6.7 Solving a Large-Scale Set Partitioning Problem; 6.8 The Algorithm for Solving Integer Programs; Summary; Exercises; Case: Motel Location for Nature's Inn; 7. Integer Programming: Logical Constraints; 7.1 Simple Logical Constraints: Exclusivity and Contingency; 7.2 Linking Constraints: The Fixed Cost Problem; 7.3 Linking Constraints: The Threshold Level Problem; 7.4 Linking Constraints: The Facility Location Model; 7.4.1 Capacitated Version; 7.4.2 Uncapacitated Version

7.5 Disjunctive Constraints: The Machine Sequencing Problem

Sommario/riassunto

Reflects the latest applied research and features state-of-the-art software for building and solving spreadsheet optimization models. Thoroughly updated to reflect the latest topical and technical advances in the field, *Optimization Modeling with Spreadsheets, Second Edition* continues to focus on solving real-world optimization problems through the creation of mathematical models and the use of spreadsheets to represent and analyze those models. Developed and extensively classroom-tested by the author, the book features a systematic approach that equips readers with the skills
