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Autore	Rosenhouse Jason
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Nota di contenuto	Cover; Contents; Preface; 1. Playing the Game: Mathematics as Applied Puzzle-Solving; 1.1 Mathematics and Puzzles; 1.2 Forced Cells; 1.3 Twins; 1.4 X-Wings; 1.5 Ariadne's Thread; 1.6 Are We Doing Math Yet?; 1.7 Triplets, Swordfish, and the Art of Generalization; 1.8 Starting Over Again; 2. Latin Squares: What Do Mathematicians Do?; 2.1 Do Latin Squares Exist?; 2.2 Constructing Latin Squares of Any Size; 2.3 Shifting and Divisibility; 2.4 Jumping in the River; 3. Greco-Latin Squares: The Problem of the Thirty-Six Officers; 3.1 Do Greco-Latin Squares Exist? 3.2 Euler's Greco-Latin Square Conjecture3.3 Mutually Orthogonal Gerechte Designs; 3.4 Mutually Orthogonal Sudoku Squares; 3.5 Who Cares?; 4. Counting: It's Harder than It Looks; 4.1 How to Count; 4.2 Counting Shidoku Squares; 4.3 How Many Sudoku Squares Are There?; 4.4 Estimating the Number of Sudoku Squares; 4.5 From Two Million to Forty-Four; 4.6 Enter the Computer; 4.7 A Note on Problem-Solving; 5. Equivalence Classes: The Importance of Being Essentially Identical; 5.1 They Might as Well Be the Same; 5.2 Transformations Preserving Sudokuness; 5.3 Equivalent Shidoku Squares 5.4 Why the Natural Approach Fails5.5 Groups; 5.6 Burnside's Lemma; 5.7 Bringing It Home; 6. Searching: The Art of Finding Needles in

Haystacks; 6.1 The Sudoku Stork; 6.2 A Stork with GPS; 6.3 How to Search; 6.4 Searching for Eighteen-Clue Sudoku; 6.5 Measuring Difficulty; 6.6 Ease and Interest Are Inversely Correlated; 6.7 Sudoku with an Extra Something; 7. Graphs: Dots, Lines, and Sudoku; 7.1 A Physics Lesson; 7.2 Two Mathematical Examples; 7.3 Sudoku as a Problem in Graph Coloring; 7.4 The Four-Color Theorem; 7.5 Many Roads to Rome; 7.6 Book Embeddings
8. Polynomials: We Finally Found a Use for Algebra
8.1 Sums and Products; 8.2 The Perils of Generalization; 8.3 Complex Polynomials; 8.4 The Rise of Experimental Mathematics; 9. Extremes: Sudoku Pushed to Its Limits; 9.1 The Joys of Going to Extremes; 9.2 Maximal Numbers of Clues; 9.3 Three Amusing Extremes; 9.4 The Rock Star Problem; 9.5 Is There "Evidence" in Mathematics?; 9.6 Sudoku Is Math in the Small; 10. Epilogue: You Can Never Have Too Many Puzzles; 10.1 Extra Regions; 10.2 Adding Value; 10.3 Comparison Sudoku; 10.4 ...And Beyond; Solutions to Puzzles; Bibliography; Index; A; B; C; D; E; F; G; H; I; J; K; L; M; N; O; P; Q; R; S; T; U; V; W; Y; Z

Sommario/riassunto

Packed with more than a hundred color illustrations and a wide variety of puzzles and brainteasers, *Taking Sudoku Seriously* uses this popular craze as the starting point for a fun-filled introduction to higher mathematics. How many Sudoku solution squares are there? What shapes other than three-by-three blocks can serve as acceptable Sudoku regions? What is the fewest number of starting clues a sound Sudoku puzzle can have? Does solving Sudoku require mathematics? Jason Rosenhouse and Laura Taalman show that answering these questions opens the door to a wealth of interesting mathematics. Indeed
