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Nota di contenuto	Part I: A Brief Introduction to Lattices -- Basic Concepts -- Special Concepts -- Congruences -- Planar Semimodular Lattices -- Part II: Some Special Techniques -- Chopped Lattices -- Boolean Triples -- Cube Extensions -- Part III: RTs -- Sectionally Complemented RT -- Minimal RT -- Semimodular RT -- Rectangular RT -- Modular RT -- Uniform RT -- Part IV: ETs -- Sectionally Complemented ET -- Semimodular ET -- Isoform ET -- Magic Wands -- Part V: Congruence Lattices of Two Related Lattices -- Sublattices -- Ideals -- Two Convex Sublattices -- Tensor Extensions -- Part VI: The Ordered Set of Principle Congruences -- The RT for Principal Congruences -- Minimal RTs -- Principal Congruence Representable Sets -- Isotone Maps -- Part VII: The Prime-Projectivity Lemma -- The Swing Lemma -- Fork Congruences -- Part VIII: The Six Congruence Properties of SPS Lattices -- Six Major Properties.

Sommario/riassunto

The congruences of a lattice form the congruence lattice. Over the last several decades, the study of congruence lattices has established itself as a large and important field with a great number of interesting and deep results, as well as many open problems. Written by one of the leading experts in lattice theory, this text provides a self-contained introduction to congruences of finite lattices and presents the major results of the last 90 years. It features the author's signature "Proof-by-Picture" method, which is used to convey the ideas behind formal proofs in a visual, more intuitive manner. Key features include: an insightful discussion of techniques to construct "nice" finite lattices with given congruence lattices and "nice" congruence-preserving extensions complete proofs, an extensive bibliography and index, and over 180 illustrations additional chapters covering new results of the last seven years, increasing the size of this edition to 430 pages, 360 statements, and 262 references This text is appropriate for a one-semester graduate course in lattice theory, and it will also serve as a valuable reference for researchers studying lattices. Reviews of previous editions: "[This] monograph…is an exceptional work in lattice theory, like all the contributions by this author. The way this book is written makes it extremely interesting for the specialists in the field but also for the students in lattice theory. — Cosmin Pelea, Studia Universitatis Babes-Bolyai Mathematica LII (1), 2007 "The book is self-contained, with many detailed proofs presented that can be followed step-by-step. I believe that this book is a much-needed tool for any mathematician wishing a gentle introduction to the field of congruences representations of finite lattices, with emphasis on the more 'geometric' aspects." — Mathematical Reviews.