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                         by George Grätzer

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   Nota di bibliografia Includes bibliographical references and index.

   Nota di contenuto   I: A Brief Introduction to Lattices -- Basic Concepts -- Special Concepts
                         -- Congruences -- Planar Semimodular Lattices -- II: Some Special
                         Techniques -- Chopped Lattices -- Boolean Triples -- Cubic
                         Extensions -- III: Congruence Lattices of Finite Lattices -- The Dilworth
                         Theorem -- Minimal Representations -- Semimodular Lattices --
                         Rectangular Lattices -- Modular Lattices -- Uniform Lattices -- IV:
                         Congruence Lattices and Lattice Extensions -- Sectionally
                         Complemented Lattices -- Semimodular Lattices -- Isoform Lattices --
                         The Congruence Lattice and the Automorphism Group -- Magic Wands
                         -- V: Congruence Lattices of Two Related Lattices -- Sublattices --
                         Ideals -- Tensor Extensions -- VI The Ordered Set of Principal
                         Congruences -- Representation Theorems -- Isotone Maps -- VII:
                         Congruence Structure -- Prime Intervals and Congruences -- Some
                         Applications of the Swing Lemma.

Sommario/riassunto

This is a self-contained exposition by one of the leading experts in lattice theory, George Grätzer, presenting the major results of the last 70 years on congruence lattices of finite lattices, featuring the author's signature Proof-by-Picture method. Key features: * Insightful discussion of techniques to construct "nice" finite lattices with given congruence lattices and "nice" congruence-preserving extensions * Contains complete proofs, an extensive bibliography and index, and over 140 illustrations * This new edition includes two new parts on Planar Semimodular Lattices and The Order of Principle Congruences, covering the research of the last 10 years The book is appropriate for a one-semester graduate course in lattice theory, and it is a practical reference for researchers studying lattices. Reviews of the first edition: "There exist a lot of interesting results in this area of lattice theory, and some of them are presented in this book. [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. Moreover, the author provides a series of companion lectures which help the reader to approach the Proof-by-Picture sections." (Cosmin Pelea, Studia Universitatis Babes-Bolyai Mathematica, Vol. LII (1), 2007) "The book is self-contained, with many detailed proofs presented that can be followed step-by-step. [I]n addition to giving the full formal details of the proofs, the author chooses a somehow more pedagogical way that he calls Proof-by-Picture, somehow related to the combinatorial (as opposed to algebraic) nature of many of the presented results. 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.