

i n herstein topics in algebra

I.N. Herstein's Topics in Algebra: A Comprehensive Guide for Students and Enthusiasts

Introduction:

Are you ready to embark on a journey into the fascinating world of abstract algebra? I.N. Herstein's "Topics in Algebra" is a legendary textbook known for its rigorous yet accessible approach to the subject. This comprehensive guide delves into the core concepts covered in Herstein's book, providing a detailed overview of its structure, content, and the invaluable insights it offers to both students and those seeking a deeper understanding of abstract algebra. Whether you're a student tackling the book for the first time or a seasoned mathematician revisiting fundamental concepts, this post will equip you with a roadmap to navigate this classic text effectively. We'll explore the key themes, discuss the challenges and rewards of studying it, and offer practical tips to enhance your learning experience. Prepare to unlock the secrets of groups, rings, and fields!

Chapter 1: The Foundation – Sets and Mappings

Herstein's book begins by laying a solid foundation in set theory and mappings (functions). This seemingly elementary chapter is crucial because it establishes the language and notation used throughout the entire text. Understanding set operations, relations, equivalence classes, and the properties of mappings is paramount before diving into the more abstract algebraic structures. Herstein's approach is remarkably clear, carefully defining terms and illustrating concepts with numerous examples. Mastering this initial chapter is key to smooth sailing through the rest of the book. This chapter emphasizes understanding:

Sets and Subsets: Definitions, notations, Venn diagrams, and operations on sets (union, intersection, complement).

Mappings (Functions): Injective, surjective, bijective mappings; composition of mappings; inverse mappings.

Equivalence Relations and Partitions: The crucial link between equivalence relations and partitions of a set. Understanding this is essential for later concepts like congruence classes in rings and fields.

Chapter 2: Group Theory – The Heart of Abstract Algebra

Group theory forms the backbone of much of abstract algebra. Herstein meticulously introduces the concept of a group, exploring its axioms, properties, and various types of groups (cyclic, abelian, etc.). He guides the reader through fundamental theorems, including Lagrange's theorem (a cornerstone of group theory), and introduces concepts like subgroups, normal subgroups, homomorphisms, and isomorphisms. The exercises in this chapter are particularly challenging but rewarding, forcing the reader to grapple with the core concepts and develop problem-solving skills. This section focuses on:

Definition and Examples of Groups: Understanding the group axioms and recognizing various examples, from familiar number systems to more abstract groups.

Subgroups and Lagrange's Theorem: Learning how to identify subgroups and understanding the powerful implications of Lagrange's theorem.

Homomorphisms and Isomorphisms: Exploring mappings between groups that preserve the group structure and understanding the concept of isomorphic groups.

Normal Subgroups and Quotient Groups: A deeper dive into the structure of groups, introducing the concept of normal subgroups and constructing quotient groups.

Chapter 3: Ring Theory – A Broader Perspective

Following group theory, Herstein introduces ring theory, expanding on the algebraic structures under consideration. Rings are more complex than groups, combining two operations (addition and multiplication) with specific axioms governing their behavior. The chapter explores various types of rings (commutative, integral domains, fields), ideals, and homomorphisms of rings. This chapter provides a solid base for future study in areas like commutative algebra and algebraic number theory. Key concepts include:

Definitions and Basic Properties of Rings: Understanding the ring axioms and exploring examples of rings like integers, polynomials, and matrices.

Ideals and Quotient Rings: Learning about ideals as special subsets of rings and constructing quotient rings.

Homomorphisms and Isomorphisms of Rings: Similar to group theory, this section explores mappings between rings that preserve the ring structure.

Integral Domains and Fields: Understanding the properties of integral domains and fields, which are special types of rings.

Chapter 4: Field Theory – The Realm of Polynomials

Field theory is often considered the culmination of the introductory material in Herstein's book. Here, the focus shifts to fields, which are special types of rings with additional properties. Herstein delves into polynomial rings, field extensions, and the fundamental theorem of algebra. This chapter often poses significant challenges, requiring a strong grasp of the preceding material. Key topics include:

Polynomials over a Field: Understanding the properties of polynomials and their behavior over a field.

Field Extensions: Constructing larger fields from smaller ones, using techniques like adjoining roots of polynomials.

The Fundamental Theorem of Algebra: A classic result stating that every non-constant polynomial with complex coefficients has at least one complex root.

Chapter 5: Linear Algebra – Connecting Algebra and Geometry

While not as extensive as the treatment of group and ring theory, Herstein includes a chapter on linear algebra, connecting the abstract algebraic structures to concrete geometric ideas. This chapter often serves as a bridge between the purely abstract topics and the more applied aspects of linear algebra. Key topics might include:

Vector Spaces: Introducing the concept of a vector space and its properties.

Linear Transformations: Exploring linear mappings between vector spaces.

Matrices and their Relation to Linear Transformations: Connecting abstract linear transformations to concrete matrix representations.

Conclusion:

I.N. Herstein's "Topics in Algebra" is not an easy read, but it is a rewarding one. It's a classic for a reason: it provides a rigorous and well-structured introduction to abstract algebra, laying the foundation for more advanced studies. The book's challenging problems and concise explanations push students to develop a deep understanding of the underlying concepts. By mastering the material, you gain a powerful toolbox for tackling a wide range of mathematical problems.

Book Outline: I.N. Herstein's Topics in Algebra

Introduction: Overview of abstract algebra and the book's structure.

Chapter 1: Sets and Mappings: Fundamental concepts of set theory and functions.

Chapter 2: Group Theory: Axioms, properties, and examples of groups; subgroups, homomorphisms, isomorphisms.

Chapter 3: Ring Theory: Axioms, properties, and examples of rings; ideals, homomorphisms, isomorphisms.

Chapter 4: Field Theory: Polynomials over fields, field extensions, the Fundamental Theorem of Algebra.

Chapter 5: Linear Algebra (Often Included): Vector spaces, linear transformations, matrices.

Conclusion: Summary of key concepts and directions for further study.

Detailed Explanation of Outline Points:

The detailed explanation of each outline point is already provided extensively in the main body of the article above.

FAQs:

1. Is Herstein's "Topics in Algebra" suitable for self-study? Yes, but it requires significant dedication and mathematical maturity. Supplementing the text with online resources and working through all the exercises is crucial.
1. What prerequisites are needed to study Herstein's book? A strong foundation in high school algebra and some familiarity with proof techniques are essential.
1. How does Herstein's approach compare to other abstract algebra texts? Herstein's book is known for its rigorous, concise style and challenging problems, which distinguishes it from

more introductory or application-focused texts.

1. What are the most challenging chapters in Herstein's book? Chapters on ring theory and field theory, particularly those dealing with ideals, field extensions, and the Fundamental Theorem of Algebra, often present the greatest challenges.
1. Are there any online resources that can help supplement Herstein's book? Yes, numerous websites, online courses, and YouTube channels offer explanations and solutions to Herstein's problems.
1. How many hours per week should I dedicate to studying Herstein's book? The time commitment varies depending on your mathematical background and learning pace; expect to dedicate several hours per week.
1. Is Herstein's book suitable for undergraduate students? Yes, it's a common textbook for undergraduate abstract algebra courses, though its rigor requires dedication.
1. What are some common applications of the concepts covered in Herstein's book? The concepts have wide-ranging applications in computer science (cryptography), physics (group theory in quantum mechanics), and other areas of mathematics.
1. Are there solutions manuals available for Herstein's book? While official solutions manuals might be limited, numerous unofficial solutions and explanations can be found online.

Related Articles:

1. Abstract Algebra for Beginners: An introductory guide to fundamental concepts, bridging the gap between high school algebra and abstract algebra.

1. Group Theory: A Visual Approach: Using visual aids and examples to help understand abstract group theory concepts.
1. Ring Theory Simplified: A more accessible explanation of ring theory concepts suitable for beginners.
1. Field Extensions Made Easy: Breaking down the complexities of field extensions into digestible parts.
1. The Fundamental Theorem of Algebra: A Proof and its Implications: A detailed proof and exploration of the significance of this fundamental theorem.
1. Applications of Group Theory in Cryptography: Exploring practical applications of group theory in modern encryption techniques.
1. Linear Algebra: A Geometric Perspective: Connecting linear algebra concepts to geometrical visualizations.
1. Solving Problems in Herstein's Topics in Algebra: A collection of solved problems and strategies for tackling challenging exercises.
1. Comparing Different Abstract Algebra Textbooks: A comparative analysis of various abstract algebra textbooks to aid in choosing the right one for your needs.

i n herstein topics in algebra: Topics in Algebra I. N. Herstein, 1991-01-16 New edition includes extensive revisions of the material on finite groups and Galois Theory. New problems added throughout.

i n herstein topics in algebra: Abstract Algebra I. N. Herstein, 1990

i n herstein topics in algebra: Fundamentals of Real Analysis Sterling K. Berberian,

2013-03-15 This book is very well organized and clearly written and contains an adequate supply of exercises. If one is comfortable with the choice of topics in the book, it would be a good candidate for a text in a graduate real analysis course. -- MATHEMATICAL REVIEWS

i n herstein topics in algebra: *Undergraduate Algebra* Serge Lang, 2013-06-29 The companion title, *Linear Algebra*, has sold over 8,000 copies The writing style is very accessible The material can be covered easily in a one-year or one-term course Includes Noah Snyder's proof of the Mason-Stothers polynomial abc theorem New material included on product structure for matrices including descriptions of the conjugation representation of the diagonal group

i n herstein topics in algebra: *A Course in Algebra* Ernest Borisovich Vinberg, 2003-04-10 Presents modern algebra. This book includes such topics as affine and projective spaces, tensor algebra, Galois theory, Lie groups, and associative algebras and their representations. It is suitable for independent study for advanced undergraduates and graduate students.

i n herstein topics in algebra: *A Book of Abstract Algebra* Charles C Pinter, 2010-01-14 Accessible but rigorous, this outstanding text encompasses all of the topics covered by a typical course in elementary abstract algebra. Its easy-to-read treatment offers an intuitive approach, featuring informal discussions followed by thematically arranged exercises. This second edition features additional exercises to improve student familiarity with applications. 1990 edition.

i n herstein topics in algebra: *Algebra* Saunders Mac Lane, Garrett Birkhoff, 2023-10-10 This book presents modern algebra from first principles and is accessible to undergraduates or graduates. It combines standard materials and necessary algebraic manipulations with general concepts that clarify meaning and importance. This conceptual approach to algebra starts with a description of algebraic structures by means of axioms chosen to suit the examples, for instance, axioms for groups, rings, fields, lattices, and vector spaces. This axiomatic approach—emphasized by Hilbert and developed in Germany by Noether, Artin, Van der Waerden, et al., in the 1920s—was popularized for the graduate level in the 1940s and 1950s to some degree by the authors' publication of *A Survey of Modern Algebra*. The present book presents the developments from that time to the first printing of this book. This third edition includes corrections made by the authors.

i n herstein topics in algebra: *Basic Abstract Algebra* Robert B. Ash, 2013-06-17 Relations between groups and sets, results and methods of abstract algebra in terms of number theory and geometry, and noncommutative and homological algebra. Solutions. 2006 edition.

i n herstein topics in algebra: *Elements of Abstract Algebra* Allan Clark, 2012-07-06 Lucid coverage of the major theories of abstract algebra, with helpful illustrations and exercises included throughout. Unabridged, corrected republication of the work originally published 1971. Bibliography. Index. Includes 24 tables and figures.

i n herstein topics in algebra: *Modern Algebra* Seth Warner, 2012-08-29 Standard text provides an exceptionally comprehensive treatment of every aspect of modern algebra. Explores algebraic structures, rings and fields, vector spaces, polynomials, linear operators, much more. Over 1,300 exercises. 1965 edition.

i n herstein topics in algebra: *Algebra: Chapter 0* Paolo Aluffi, 2021-11-09 *Algebra: Chapter 0* is a self-contained introduction to the main topics of algebra, suitable for a first sequence on the subject at the beginning graduate or upper undergraduate level. The primary distinguishing feature of the book, compared to standard textbooks in algebra, is the early introduction of categories, used as a unifying theme in the presentation of the main topics. A second feature consists of an emphasis on homological algebra: basic notions on complexes are presented as soon as modules have been introduced, and an extensive last chapter on homological algebra can form the basis for a follow-up introductory course on the subject. Approximately 1,000 exercises both provide adequate practice to consolidate the understanding of the main body of the text and offer the opportunity to explore many other topics, including applications to number theory and algebraic geometry. This will allow instructors to adapt the textbook to their specific choice of topics and provide the independent reader with a richer exposure to algebra. Many exercises include substantial hints, and navigation of the topics is facilitated by an extensive index and by hundreds of cross-references.

i n herstein topics in algebra: *Noncommutative Rings* I. N. Herstein, 1994-12-31

Noncommutative Rings provides a cross-section of ideas, techniques, and results that give the reader an idea of that part of algebra which concerns itself with noncommutative rings. In the space of 200 pages, Herstein covers the Jacobson radical, semisimple rings, commutativity theorems, simple algebras, representations of finite groups, polynomial identities, Goldie's theorem, and the Golod-Shafarevitch theorem. Almost every practicing ring theorist has studied portions of this classic monograph.

i n herstein topics in algebra: *A Concrete Introduction to Higher Algebra* Lindsay N. Childs, 2012-12-04 An informal and readable introduction to higher algebra at the post-calculus level. The concepts of ring and field are introduced through study of the familiar examples of the integers and polynomials, with much emphasis placed on congruence classes leading the way to finite groups and finite fields. New examples and theory are integrated in a well-motivated fashion and made relevant by many applications -- to cryptography, coding, integration, history of mathematics, and especially to elementary and computational number theory. The later chapters include expositions of Rabin's probabilistic primality test, quadratic reciprocity, and the classification of finite fields. Over 900 exercises, ranging from routine examples to extensions of theory, are scattered throughout the book, with hints and answers for many of them included in an appendix.

i n herstein topics in algebra: *Basic Abstract Algebra* P. B. Bhattacharya, S. K. Jain, S. R. Nagpaul, 1994-11-25 This book provides a complete abstract algebra course, enabling instructors to select the topics for use in individual classes.

i n herstein topics in algebra: *Abstract Algebra* Thomas W. Hungerford, 1997

i n herstein topics in algebra: *Algebra* Michael Artin, 2013-09-01 *Algebra*, Second Edition, by Michael Artin, is ideal for the honors undergraduate or introductory graduate course. The second edition of this classic text incorporates twenty years of feedback and the author's own teaching experience. The text discusses concrete topics of algebra in greater detail than most texts, preparing students for the more abstract concepts; linear algebra is tightly integrated throughout.

i n herstein topics in algebra: *An Introduction to Algebraic Structures* Joseph Landin, 2012-08-29 This self-contained text covers sets and numbers, elements of set theory, real numbers, the theory of groups, group isomorphism and homomorphism, theory of rings, and polynomial rings. 1969 edition.

i n herstein topics in algebra: *A First Course in Calculus* Serge Lang, 2012-09-17 This fifth edition of Lang's book covers all the topics traditionally taught in the first-year calculus sequence. Divided into five parts, each section of *A FIRST COURSE IN CALCULUS* contains examples and applications relating to the topic covered. In addition, the rear of the book contains detailed solutions to a large number of the exercises, allowing them to be used as worked-out examples -- one of the main improvements over previous editions.

i n herstein topics in algebra: *Introduction to Abstract Algebra* W. Keith Nicholson, 2012-03-20 Praise for the Third Edition . . . an expository masterpiece of the highest didactic value that has gained additional attractivity through the various improvements . . .—Zentralblatt MATH The Fourth Edition of *Introduction to Abstract Algebra* continues to provide an accessible approach to the basic structures of abstract algebra: groups, rings, and fields. The book's unique presentation helps readers advance to abstract theory by presenting concrete examples of induction, number theory, integers modulo n , and permutations before the abstract structures are defined. Readers can immediately begin to perform computations using abstract concepts that are developed in greater detail later in the text. The Fourth Edition features important concepts as well as specialized topics, including: The treatment of nilpotent groups, including the Frattini and Fitting subgroups Symmetric polynomials The proof of the fundamental theorem of algebra using symmetric polynomials The proof of Wedderburn's theorem on finite division rings The proof of the Wedderburn-Artin theorem Throughout the book, worked examples and real-world problems illustrate concepts and their applications, facilitating a complete understanding for readers regardless of their background in mathematics. A wealth of computational and theoretical exercises, ranging from basic to complex,

allows readers to test their comprehension of the material. In addition, detailed historical notes and biographies of mathematicians provide context for and illuminate the discussion of key topics. A solutions manual is also available for readers who would like access to partial solutions to the book's exercises. Introduction to Abstract Algebra, Fourth Edition is an excellent book for courses on the topic at the upper-undergraduate and beginning-graduate levels. The book also serves as a valuable reference and self-study tool for practitioners in the fields of engineering, computer science, and applied mathematics.

i n herstein topics in algebra: Visual Group Theory Nathan Carter, 2021-06-08 Recipient of the Mathematical Association of America's Beckenbach Book Prize in 2012! Group theory is the branch of mathematics that studies symmetry, found in crystals, art, architecture, music and many other contexts, but its beauty is lost on students when it is taught in a technical style that is difficult to understand. Visual Group Theory assumes only a high school mathematics background and covers a typical undergraduate course in group theory from a thoroughly visual perspective. The more than 300 illustrations in Visual Group Theory bring groups, subgroups, homomorphisms, products, and quotients into clear view. Every topic and theorem is accompanied with a visual demonstration of its meaning and import, from the basics of groups and subgroups through advanced structural concepts such as semidirect products and Sylow theory.

i n herstein topics in algebra: An Introduction to Differentiable Manifolds and Riemannian Geometry, 1975-08-22 An Introduction to Differentiable Manifolds and Riemannian Geometry

i n herstein topics in algebra: Hot Molecules, Cold Electrons Paul Nahin, 2020-03-17 This book is a testament to the intimate, mutual embrace of mathematics and physics. It achieves that by telling the story of an historical event of tremendous impact upon society, both spiritually and technically - the mid-19th century construction of the trans-Atlantic telegraph cable, which reduced the time to send a message across the ocean from weeks to minutes. The story of the cable actually begins decades earlier, at the start of the century, with the French mathematical physicist Joseph Fourier's development of the mathematics that the Scottish physicist William Thomson (later Lord Kelvin) would use to analyze the electrical physics of the cable. The story of Fourier opens the book, that of Thomson completes it, and in-between the reader will learn how to derive Fourier's second-order partial differential equation for the flow of heat energy in matter, how Fourier solved the heat equation, how Thomson used Fourier's solutions to calculate the age of the Earth (imagined to be the result of the of an initially molten sphere of blinding brilliance) and, finally, how Thomson showed that the heat equation also describes the Atlantic cable. An epilogue describing the post-Thomson developments completes the book. All readers who have completed first courses at the level of AP-calculus and AP-physics will be able to read this book. This is a perhaps surprising feature of the book, as the mathematics discussed is normally not encountered until the second year (or even later) of college-level work. This book shows that, in fact, the technical material is fully graspable by a college freshman. Unlike a pure technical book, readers will also find a lot of fascinating history in this book (including the bizarre story of how the English novelist Charles Dickens used the Atlantic cable to send a coded message - during his 1867 American reading tour - to avoid a career-damaging scandal concerning his mistress)--

i n herstein topics in algebra: Matters Mathematical I. N. Herstein, Irving Kaplansky, 1978 From the Preface: This book is based on notes prepared for a course at the University of Chicago. The course was intended for nonmajors whose mathematical training was somewhat limited ... Mastery of the material requires nothing beyond algebra and geometry normally covered in high school ... [It] could be used in courses designed for students who intend to teach mathematics ... We want the reader to see mathematics as a living subject in which new results are constantly being obtained. Reprint/Revision History: second edition 1978

i n herstein topics in algebra: Group Theory in Physics Wu-Ki Tung, 1985 An introductory text book for graduates and advanced undergraduates on group representation theory. It emphasizes group theory's role as the mathematical framework for describing symmetry properties of classical and quantum mechanical systems. Familiarity with basic group concepts and techniques is

invaluable in the education of a modern-day physicist. This book emphasizes general features and methods which demonstrate the power of the group-theoretical approach in exposing the systematics of physical systems with associated symmetry. Particular attention is given to pedagogy. In developing the theory, clarity in presenting the main ideas and consequences is given the same priority as comprehensiveness and strict rigor. To preserve the integrity of the mathematics, enough technical information is included in the appendices to make the book almost self-contained. A set of problems and solutions has been published in a separate booklet.

i n herstein topics in algebra: Conformal Blocks, Generalized Theta Functions and the Verlinde Formula Shrawan Kumar, 2021-11-25 This book gives a complete proof of the Verlinde formula and of its connection to generalized theta functions.

i n herstein topics in algebra: Abstract Algebra John A. Beachy, William D. Blair, 1996

i n herstein topics in algebra: Contemporary Abstract Algebra Joseph Gallian, 2016-01-01 CONTEMPORARY ABSTRACT ALGEBRA, NINTH EDITION provides a solid introduction to the traditional topics in abstract algebra while conveying to students that it is a contemporary subject used daily by working mathematicians, computer scientists, physicists, and chemists. The text includes numerous figures, tables, photographs, charts, biographies, computer exercises, and suggested readings giving the subject a current feel which makes the content interesting and relevant for students. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

i n herstein topics in algebra: Linear Algebra Problem Book Paul R. Halmos, 1995-12-31 Linear Algebra Problem Book can be either the main course or the dessert for someone who needs linear algebra and today that means every user of mathematics. It can be used as the basis of either an official course or a program of private study. If used as a course, the book can stand by itself, or if so desired, it can be stirred in with a standard linear algebra course as the seasoning that provides the interest, the challenge, and the motivation that is needed by experienced scholars as much as by beginning students. The best way to learn is to do, and the purpose of this book is to get the reader to DO linear algebra. The approach is Socratic: first ask a question, then give a hint (if necessary), then, finally, for security and completeness, provide the detailed answer.

i n herstein topics in algebra: Matrix Theory and Linear Algebra Israel N. Herstein, David J. Winter, 1989

i n herstein topics in algebra: Advanced Algebra Anthony W. Knap, 2007-10-11 Basic Algebra and Advanced Algebra systematically develop concepts and tools in algebra that are vital to every mathematician, whether pure or applied, aspiring or established. Advanced Algebra includes chapters on modern algebra which treat various topics in commutative and noncommutative algebra and provide introductions to the theory of associative algebras, homological algebras, algebraic number theory, and algebraic geometry. Many examples and hundreds of problems are included, along with hints or complete solutions for most of the problems. Together the two books give the reader a global view of algebra and its role in mathematics as a whole.

i n herstein topics in algebra: Basic Matrix Theory Leonard E. Fuller, 2017-09-13 This guide to using matrices as a mathematical tool offers a model for procedure rather than an exposition of theory. Detailed examples illustrate the focus on computational methods. 1962 edition.

i n herstein topics in algebra: A First Course in Abstract Algebra John B. Fraleigh, 2003*

i n herstein topics in algebra: Fields and Galois Theory John M. Howie, 2007-10-11 A modern and student-friendly introduction to this popular subject: it takes a more natural approach and develops the theory at a gentle pace with an emphasis on clear explanations. Features plenty of worked examples and exercises, complete with full solutions, to encourage independent study. Previous books by Howie in the SUMS series have attracted excellent reviews.

i n herstein topics in algebra: Linear Algebra Done Right Sheldon Axler, 1997-07-18 This text for a second course in linear algebra, aimed at math majors and graduates, adopts a novel approach by banishing determinants to the end of the book and focusing on understanding the structure of linear operators on vector spaces. The author has taken unusual care to motivate concepts and to

simplify proofs. For example, the book presents - without having defined determinants - a clean proof that every linear operator on a finite-dimensional complex vector space has an eigenvalue. The book starts by discussing vector spaces, linear independence, span, basics, and dimension. Students are introduced to inner-product spaces in the first half of the book and shortly thereafter to the finite-dimensional spectral theorem. A variety of interesting exercises in each chapter helps students understand and manipulate the objects of linear algebra. This second edition features new chapters on diagonal matrices, on linear functionals and adjoints, and on the spectral theorem; some sections, such as those on self-adjoint and normal operators, have been entirely rewritten; and hundreds of minor improvements have been made throughout the text.

i n herstein topics in algebra: Basic Algebra I Nathan Jacobson, 2012-12-11 A classic text and standard reference for a generation, this volume covers all undergraduate algebra topics, including groups, rings, modules, Galois theory, polynomials, linear algebra, and associative algebra. 1985 edition.

i n herstein topics in algebra: Topics in Ring Theory I. N. Herstein, 1969

i n herstein topics in algebra: Introduction to Ring Theory Paul M. Cohn, 2012-12-06 A clear and structured introduction to the subject. After a chapter on the definition of rings and modules there are brief accounts of Artinian rings, commutative Noetherian rings and ring constructions, such as the direct product, Tensor product and rings of fractions, followed by a description of free rings. Readers are assumed to have a basic understanding of set theory, group theory and vector spaces. Over two hundred carefully selected exercises are included, most with outline solutions.

i n herstein topics in algebra: Understanding Analysis Stephen Abbott, 2012-12-06 This elementary presentation exposes readers to both the process of rigor and the rewards inherent in taking an axiomatic approach to the study of functions of a real variable. The aim is to challenge and improve mathematical intuition rather than to verify it. The philosophy of this book is to focus attention on questions which give analysis its inherent fascination. Each chapter begins with the discussion of some motivating examples and concludes with a series of questions.

i n herstein topics in algebra: Abstract Algebra David S. Dummit, 2018-09-11 Abstract Algebra, 4th Edition is designed to give the reader insight into the power and beauty that accrues from a rich interplay between different areas of mathematics. The book carefully develops the theory of different algebraic structures, beginning from basic definitions to some in-depth results, using numerous examples and exercises to aid the reader's understanding. In this way, readers gain an appreciation for how mathematical structures and their interplay lead to powerful results and insights in a number of different settings.

i n herstein topics in algebra: Linear Algebra Kuldeep Singh, 2013-10 This book is intended for first- and second-year undergraduates arriving with average mathematics grades ... The strength of the text is in the large number of examples and the step-by-step explanation of each topic as it is introduced. It is compiled in a way that allows distance learning, with explicit solutions to all of the set problems freely available online <http://www.oup.co.uk/companion/singh> -- From preface.

Additional Resources

i n herstein topics in algebra

[I N Herstein Topics In Algebra](#)

I N Herstein Topics In Algebra

Related Articles

- [illustrative mathematics geometry answer key](#)
- [ib math analysis and approaches hl](#)
- [icivics i have rights answer key](#)

[Back to Home](#)