Ethan Bloch Proofs Solutions Manual

Cognitive Enhancement: Pharmacologic, Environmental and Genetic Factors addresses the gap that exists in research on the topic, gathering multidisciplinary knowledge and tools that help the reader understand the basics of cognitive enhancement. It also provides assistance in designing procedures and pharmacological approaches to further the use of novel cognitive enhancers, a field that offers potential benefit to a variety of populations, including those with neurologic and psychiatric disorders, mild aging-related cognitive impairment, and those who want to improve intellectual performance. The text builds on our knowledge of the molecular/cellular basis of cognitive function, offering the technological developments that may soon enhance cognition. Separate sections cover enhancement drugs, environmental conditions, and genetic factors in terms of both human and animal studies, including both healthy/young and aging/diseased individuals. Provides a multidisciplinary knowledge, enabling a further understanding of cognitive enhancement Offers coverage of the pharmacologic, environmental, and genetic factors relevant to the topic Discusses cognitive enhancement from the perspective of both healthy and diseased or aging populations Topics are discussed in terms of both human and animal studies
A look at the rebellious thinkers who are challenging old ideas with their insights into the ways countless elements of complex systems interact to produce spontaneous order out of confusion
#1 NEW YORK TIMES BESTSELLER • “The story of modern medicine and bioethics—and, indeed, race relations—is refracted beautifully, and movingly.”—Entertainment Weekly NOW A MAJOR MOTION PICTURE FROM HBO® STARRING OPRAH WINFREY AND ROSE BYRNE • ONE OF THE “MOST INFLUENTIAL” (CNN), “DEFINING” (LITHUB), AND “BEST” (THE PHILADELPHIA INQUIRER) BOOKS OF THE DECADE • ONE OF ESSENCE’S 50 MOST IMPACTFUL BLACK BOOKS OF THE PAST 50 YEARS • WINNER OF THE CHICAGO TRIBUNE HEARTLAND PRIZE FOR NONFICTION NAMED ONE OF THE BEST BOOKS OF THE YEAR BY The New York Times Book Review • Entertainment Weekly • O: The Oprah Magazine • NPR • Financial Times • New York • Independent (U.K.) • Times (U.K.) • Publishers Weekly • Library Journal • Kirkus Reviews • Booklist • Globe and Mail Her name was Henrietta Lacks, but scientists know her as HeLa. She was a poor Southern tobacco farmer who worked the same land as her slave ancestors, yet her cells—taken without her knowledge—became one of the most important tools in medicine: The first “immortal” human cells grown in culture, which are still alive today, though she has been dead for more than sixty years. HeLa cells were vital for developing the polio vaccine; uncovered secrets of cancer, viruses, and the atom bomb’s effects; helped lead to important advances like in vitro fertilization, cloning, and gene mapping; and have been bought and sold by the billions. Yet Henrietta Lacks remains virtually unknown, buried in an unmarked grave. Henrietta’s family did not learn of her “immortality” until more than twenty years after her death, when scientists investigating HeLa began using her husband and children in research without informed consent. And though the cells had launched a multimillion-dollar industry that sells human biological materials, her family never saw any of the profits. As Rebecca Skloot so brilliantly shows, the story of the Lacks family—past and present—is inextricably connected to the dark history of experimentation on African Americans, the birth of bioethics, and the legal battles over whether we control the stuff we are made of. Over the decade it took to uncover this story, Rebecca became enmeshed in the lives of the Lacks family—especially Henrietta’s daughter Deborah. Deborah was consumed with questions: Had scientists cloned her mother? Had they killed her to harvest her cells? And if her mother was so important to medicine, why couldn’t her children afford health insurance? Intimate in feeling, astonishing in scope, and impossible to put down, The Immortal Life of Henrietta Lacks captures the beauty and drama of scientific discovery, as well as its human consequences.
The authors provide an introduction to quantum computing. Aimed at advanced undergraduate and beginning graduate students in these disciplines, this text is illustrated with diagrams and exercises.
An Introduction to Quantum Computing
ARSC Guide to Audio Preservation
Analytical Mechanics
The Law, Policy and Ethics of COVID-19
Groups
Fundamentals of Complex Analysis
Market_Desc: Upper undergraduate and graduate level modern algebra courses Special Features: · Includes applications so students can see right away how to use the theory· This classic text has sold almost 12,000 units· Contains numerous examples· Includes chapters on Boolean Algebras, groups, quotient groups, symmetry groups in three dimensions, Polya-Burnside method of enumeration, monoids and machines, rings and fields, polynomial and Euclidean rings, quotient rings, field extensions, Latin squares, geometrical constructions, and error-correcting codes· Andwers to odd-numbered exercises so students can check their work About The Book: The book covers all the group, ring, and field theory that is usually contained in a standard modern algebra course; the exact sections containing this material are indicated in the Table of Contents. It stops short of the Sylow theorems and Galois theory. These topics could only be touched on in a first course, and the author feels that more time should be spent on them if they are to be appreciated.
Quantum mechanics, the subfield of physics that describes the behavior of very small (quantum) particles, provides the basis for a new paradigm of computing. First proposed in the 1980s as a way to improve computational modeling of quantum systems, the field of quantum computing has recently garnered significant attention due to progress in building small-scale devices. However, significant technical advances will be required before a large-scale, practical quantum computer can be achieved. Quantum Computing: Progress and Prospects provides an introduction to the field, including the unique characteristics and constraints of the technology, and assesses the feasibility and implications of creating a functional quantum computer capable of addressing real-world problems. This report considers hardware and software requirements, quantum algorithms, drivers of advances in quantum computing and quantum devices, benchmarks associated with relevant use cases, the time and resources required, and how to assess the probability of success.
“Proofs and Fundamentals: A First Course in Abstract Mathematics” 2nd edition is designed as a "transition" course to introduce undergraduates to the writing of rigorous mathematical proofs, and to such fundamental mathematical ideas as sets, functions, relations, and cardinality. The text serves as a bridge between computational courses such as calculus, and more theoretical, proofs-oriented courses such as linear algebra, abstract algebra and real analysis. This 3-part work carefully balances Proofs, Fundamentals, and Extras. Part 1 presents logic and basic proof techniques; Part 2 thoroughly covers fundamental material such as sets, functions and relations; and Part 3 introduces a variety of extra topics such as groups, combinatorics and sequences. A gentle, friendly style is used, in which motivation and informal discussion play a key role, and yet high standards in rigor and in writing are never compromised. New to the second edition: 1) A new section about the foundations of set theory has been added at the end of the chapter about sets. This section includes a very informal discussion of the Zermelo– Fraenkel Axioms for set theory. We do not make use of these axioms subsequently in the text, but it is valuable for any mathematician to be aware that an axiomatic basis for set theory exists. Also included in this new section is a slightly expanded discussion of the Axiom of Choice, and new discussion of Zorn's Lemma, which is used later in the text. 2) The chapter about the cardinality of sets has been rearranged and expanded. There is a new section at the start of the chapter that summarizes various properties of the set of natural numbers; these properties play important roles subsequently in the chapter. The sections on induction and recursion have been slightly expanded, and have been relocated to an earlier place in the chapter (following the new section), both because they are more concrete than the material found in the other sections of the chapter, and because ideas from the sections on induction and recursion are used in the other sections. Next comes the section on the cardinality of sets (which was originally the first section of the chapter); this section gained proofs of the Schroeder–Bernstein theorem and the Trichotomy Law for Sets, and lost most of the material about finite and countable sets, which has now been moved to a new section devoted to those two types of sets. The chapter concludes with the section on the cardinality of the number systems. 3) The chapter on the construction of the natural numbers, integers and rational numbers from the Peano Postulates was removed entirely. That material was originally included to provide the needed background about the number systems, particularly for the discussion of the cardinality of sets, but it was always somewhat out of place given the level and scope of this text. The background material about the natural numbers needed for the cardinality of sets has now been summarized in a new section at the start of that chapter, making the chapter both self-contained and more accessible than it previously was. 4) The section on families of sets has been thoroughly revised, with the focus being on families of sets in general, not necessarily thought of as indexed. 5) A new section about the convergence of sequences has been added to the chapter on selected topics. This new section, which treats a topic from real analysis, adds some diversity to the chapter, which had hitherto contained selected topics of only an algebraic or combinatorial nature. 6) A new section called ``You Are the Professor'' has been added to the end of the last chapter. This new section, which includes a number of attempted proofs taken from actual homework exercises submitted by students, offers the reader the opportunity to solidify her facility for writing proofs by critiquing these submissions as if she were the instructor for the course. 7) All known errors have been corrected. 8) Many minor adjustments of wording have been made throughout the text, with the hope of improving the exposition.
The demise of the monarchy and the bodily absence of a King caused a representational crisis in the early republic, forcing the American people to reconstruct the social symbolic order in a new and unfamiliar way. Social historians have routinely understood the Revolution and the earlyrepublic as projects dedicated to and productive of reason, with "the people" as an orderly and sensible collective at odds with the volatile and unthinking crowd. American Enchantment rejects this traditionally held vision of a rational public sphere, arguing that early Americans dealt with thepost-monarchical crisis by engaging in "civil mysticism," not systematic discussion and debate. By evaluating a wide range of social and political rituals and literary and cultural discourses, Sizemore shows how "enchantment" becomes a vital mode of enacting the people after the demise of traditional monarchical forms. In works by Charles Brockden Brown, Washington Irving, Catharine Sedgwick,and Nathaniel Hawthorne - as well as in Delaware oral histories, accounts of George Washington's inauguration, and Methodist conversion narratives - enchantment is an experience uniquely capable of producing new forms of popular power and social affiliation. Recognizing the role of enchantment inconstituting the people overturns some of the most common-sense assumptions in the post-revolutionary world: above all, that the people are not simply a flesh-and-blood substance, but also a mystical force.
The Emerging Science at the Edge of Order and Chaos
Man in the Dark
An Introduction to Abstract Mathematics
Differential Equations
A First Course in Geometric Topology and Differential Geometry
Proofs and Fundamentals
Following the same successful approach as Dr. Burn's previous book on number theory, this text consists of a carefully constructed sequence of questions that will enable the reader, through participation, to study all the group theory covered by a conventional first university course. An introduction to vector spaces, leading to the study of linear groups, and an introduction to complex numbers, leading to the study of Möbius transformations and stereographic projection, are also included. Quaternions and their relationships to 3-dimensional isometries are covered, and the climax of the book is a study of the crystallographic groups, with a complete analysis of these groups in two dimensions.
The aim of this book is to help students write mathematics better. Throughout it are large exercise sets well-integrated with the text and varying appropriately from easy to hard. Basic issues are treated, and attention is given to small issues like not placing a mathematical symbol directly after a punctuation mark. And it provides many examples of what students should think and what they should write and how these two are often not the same.
Includes detailed step-by-step solutions to selected odd-numbered problems.
Bond and Keane explicate the elements of logical, mathematical argument to elucidate the meaning and importance of mathematical rigor. With definitions of concepts at their disposal, students learn the rules of logical inference, read and understand proofs of theorems, and write their own proofs all while becoming familiar with the grammar of mathematics and its style. In addition, they will develop an appreciation of the different methods of proof (contradiction, induction), the value of a proof, and the beauty of an elegant argument. The authors emphasize that mathematics is an ongoing, vibrant disciplineits long, fascinating history continually intersects with territory still uncharted and questions still in need of answers. The authors extensive background in teaching mathematics shines through in this balanced, explicit, and engaging text, designed as a primer for higher- level mathematics courses. They elegantly demonstrate process and application and recognize the byproducts of both the achievements and the missteps of past thinkers. Chapters 1-5 introduce the fundamentals of abstract mathematics and chapters 6-8 apply the ideas and techniques, placing the earlier material in a real context. Readers interest is continually piqued by the use of clear explanations, practical examples, discussion and discovery exercises, and historical comments.
Discrete Mathematical Structures with Applications to Computer Science
Complexity
MODERN ALGEBRA WITH APPLICATIONS
Introduction to Linear Optimization
A Gentle Introduction
Foundations of Computational Mathematics
The Mathematics of Voting and Elections: A Hands-on Approach will help you discover answers to these and many other questions. Easily accessible to anyone interested in the subject, the book requires virtually no prior mathematical experience beyond basic arithmetic, and includes numerous examples and discussions regarding actual elections from politics and popular culture.
The novel coronavirus SARS-CoV-2, which causes the disease known as COVID-19, has infected people in 212 countries so far and on every continent except Antarctica. Vast changes to our home lives, social interactions, government functioning and relations between countries have swept the world in a few months and are difficult to hold in one’s mind at one time. That is why a collaborative effort such as this edited, multidisciplinary collection is needed. This book confronts the vulnerabilities and interconnectedness made visible by the pandemic and its consequences, along with the legal, ethical and policy responses. These include vulnerabilities for people who have been harmed or will be harmed by the virus directly and those harmed by measures taken to slow its relentless march; vulnerabilities exposed in our institutions, governance and legal structures; and vulnerabilities in other countries and at the global level where persistent injustices harm us all. Hopefully, COVID-19 will forces us to deeply reflect on how we govern and our policy priorities; to focus preparedness, precaution, and recovery to include all, not just some. Published in English with some chapters in French.
Proofs and FundamentalsA First Course in Abstract MathematicsSpringer Science & Business Media
Networks of relationships help determine the careers that people choose, the jobs they obtain, the products they buy, and how they vote. The many aspects of our lives that are governed by social networks make it critical to understand how they impact behavior, which network structures are likely to emerge in a society, and why we organize ourselves as we do. In Social and Economic Networks, Matthew Jackson offers a comprehensive introduction to social and economic networks, drawing on the latest findings in economics, sociology, computer science, physics, and mathematics. He provides empirical background on networks and the regularities that they exhibit, and discusses random graph-based models and strategic models of network formation. He helps readers to understand behavior in networked societies, with a detailed analysis of learning and diffusion in networks, decision making by individuals who are influenced by their social neighbors, game theory and markets on networks, and a host of related subjects. Jackson also describes the varied statistical and modeling techniques used to analyze social networks. Each chapter includes exercises to aid students in their analysis of how networks function. This book is an indispensable resource for students and researchers in economics, mathematics, physics, sociology, and business.
Social and Economic Networks
Pharmacologic, Environmental and Genetic Factors
Rituals of the People in the Post-Revolutionary World
Progress and Prospects
The Real Numbers and Real Analysis
Topology of Surfaces
This is a concise introductory textbook for a one-semester (40-class) course in the history and philosophy of mathematics. It is written for mathemat ics majors, philosophy students, history of science students, and (future) secondary school mathematics teachers. The only prerequisite is a solid command of precalculus mathematics. On the one hand, this book is designed to help mathematics majors ac quire a philosophical and cultural understanding of their subject by means of doing actual mathematical problems from different eras. On the other hand, it is designed to help philosophy, history, and education students come to a deeper understanding of the mathematical side of culture by means of writing short essays. The way I myself teach the material, stu dents are given a choice between mathematical assignments, and more his torical or philosophical assignments. (Some sample assignments and tests are found in an appendix to this book.) This book differs from standard textbooks in several ways. First, it is shorter, and thus more accessible to students who have trouble coping with vast amounts of reading. Second, there are many detailed explanations of the important mathematical procedures actually used by famous mathe maticians, giving more mathematically talented students a greater oppor tunity to learn the history and philosophy by way of problem solving.
Master introductory mechanics with ANALYTICAL MECHANICS! Direct and practical, this physics text is designed to help you grasp the challenging concepts of physics. Specific cases are included to help you master theoretical material. Numerous worked examples found throughout increase your problem-solving skills and prepare you to succeed on tests.
A new novel with a dark political twist from "one of America's greats."* Man in the Dark is Paul Auster's brilliant, devastating novel about the many realities we inhabit as wars flame all around us. Seventy-two-year-old August Brill is recovering from a car accident in his daughter's house in Vermont. When sleep refuses to come, he lies in bed and tells himself stories, struggling to push back thoughts about things he would prefer to forget—his wife's recent death and the horrific murder of his granddaughter's boyfriend, Titus. The retired book critic imagines a parallel world in which America is not at war with Iraq but with itself. In this other America the twin towers did not fall and the 2000 election results led to secession, as state after state pulled away from the union and a bloody civil war ensued. As the night progresses, Brill's story grows increasingly intense, and what he is so desperately trying to avoid insists on being told. Joined in the early hours by his granddaughter, he gradually opens up to her and recounts the story of his marriage. After she falls asleep, he at last finds the courage to revisit the trauma of Titus's death. Passionate and shocking, Man in the Dark is a novel of our moment, a book that forces us to confront the blackness of night even as it celebrates the existence of ordinary joys in a world capable of the most grotesque violence. *Time Out (Chicago)
This is the eBook of the printed book and may not include any media, website access codes, or print supplements that may come packaged with the bound book. This is the best seller in this market. It provides a comprehensive introduction to complex variable theory and its applications to current engineering problems. It is designed to make the fundamentals of the subject more easily accessible to students who have little inclination to wade through the rigors of the axiomatic approach. Modeled after standard calculus books–both in level of exposition and layout–it incorporates physical applications throughout the presentation, so that the mathematical methodology appears less sterile to engineering students.
Foundations Of Mechanics
Antenna Theory
Quantum Computing
A Path to Geometry
A Conceptual Framework for Interpreting Recorded Human History
Intercourse
Renowned professor and author Gilbert Strang demonstrates that linear algebra is a fascinating subject by showing both its beauty and value. While the mathematics is there, the effort is not all concentrated on proofs. Strang's emphasis is on understanding. He explains concepts, rather than deduces. This book is written in an informal and personal style and teaches real mathematics. The gears change in Chapter 2 as students reach the introduction of vector spaces. Throughout the book, the theory is motivated and reinforced by genuine applications, allowing pure mathematicians to teach applied mathematics.
A thorough exposition of quantum computing and the underlying concepts of quantum physics, with explanations of the relevant mathematics and numerous examples. The combination of two of the twentieth century's most influential and revolutionary scientific theories, information theory and quantum mechanics, gave rise to a radically new view of computing and information. Quantum information processing explores the implications of using quantum mechanics instead of classical mechanics to model information and its processing. Quantum computing is not about changing the physical substrate on which computation is done from classical to quantum but about changing the notion of computation itself, at the most basic level. The fundamental unit of computation is no longer the bit but the quantum bit or qubit. This comprehensive introduction to the field offers a thorough exposition of quantum computing and the underlying concepts of quantum physics, explaining all the relevant mathematics and offering numerous examples. With its careful development of concepts and thorough explanations, the book makes quantum computing accessible to students and professionals in mathematics, computer science, and engineering. A reader with no prior knowledge of quantum physics (but with

sufficient knowledge of linear algebra) will be able to gain a fluent understanding by working through the book.
This text is a rigorous, detailed introduction to real analysis that presents the fundamentals with clear exposition and carefully written definitions, theorems, and proofs. It is organized in a distinctive, flexible way that would make it equally appropriate to undergraduate mathematics majors who want to continue in mathematics, and to future mathematics teachers who want to understand the theory behind calculus. The Real Numbers and Real Analysis will serve as an excellent one-semester text for undergraduates majoring in mathematics, and for students in mathematics education who want a thorough understanding of the theory behind the real number system and calculus.
Incorporating an innovative modeling approach, this book for a one-semester differential equations course emphasizes conceptual understanding to help users relate information taught in the classroom to real-world experiences. Certain models reappear throughout the book as running themes to synthesize different concepts from multiple angles, and a dynamical systems focus emphasizes predicting the long-term behavior of these recurring models. Users will discover how to identify and harness the mathematics they will use in their careers, and apply it effectively outside the classroom. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.
Proofs from THE BOOK
The Immortal Life of Henrietta Lacks
The Mathematics of Voting and Elections
A Philosophical Approach
Linear Algebra and Its Applications
Violence and Social Orders
Intercourse is a book that moves through the sexed world of dominance and submission. It moves in descending circles, not in a straight line, and as in a vortex each spiral goes down deeper. Its formal model is Dante's Inferno; its lyrical debt is to Rimbaud; the equality it envisions is rooted in the dreams of women, silent generations, pioneer voices, lone rebels, and masses who agitated, demanded, cried out, broke laws, and even begged. The begging was a substitute for retaliatory violence: doing bodily harm back to those who use or injure you. I want women to be done with begging. The public censure of women as if we are rabid because we speak without apology about the world in which we live is a strategy of threat that usually works. Men often react to women's words - speaking and writing - as if they were acts of violence; sometimes men react to women's words with violence. So we lower our voices. Women whisper. Women apologize. Women shut up. Women trivialize what we know. Women shrink. Women pull back. Most women have experienced enough dominance from men - control, violence, insult, contempt - that no threat seems empty. Intercourse does not say, forgive me and love me. It does not say, I forgive you, I love you. For a woman writer to thrive (or, arguably, to survive) in these current hard times, forgiveness and love must be subtext. No. I say no. Intercourse is search and assertion, passion and fury; and its form - no less than its content - deserves critical scrutiny and respect.---- PREFACE
According to the great mathematician Paul Erdös, God maintains perfect mathematical proofs in The Book. This book presents the authors candidates for such "perfect proofs," those which contain brilliant ideas, clever connections, and wonderful observations, bringing new insight and surprising perspectives to problems from number theory, geometry, analysis, combinatorics, and graph theory. As a result, this book will be fun reading for anyone with an interest in mathematics.
The Latest Resource for the Study of Antenna Theory! In a discipline that has experienced vast technological changes, this text offers the most recent look at all the necessary topics. Highlights include: * New coverage of microstrip antennas provides information essential to a wide variety of practical designs of rectangular and circular patches, including computer programs. * Applications of Fourier transform (spectral) method to antenna radiation. * Updated material on moment methods, radar cross section, mutual impedances, aperture and horn antennas, compact range designs, and antenna measurements. A New Emphasis on Design! Balanis features a tremendous increase in design procedures and equations. This presents a solid solution to the challenge of meeting real-life situations faced by engineers. Computer programs contained in the book-and accompanying software-have been developed to help engineers analyze, design, and visualize the radiation characteristics of antennas.
This book provides students of mathematics with the minimum amount of knowledge in logic and set theory needed for a profitable continuation of their studies. There is a chapter on statement calculus, followed by eight chapters on set theory.
A Hands-on Approach
Eloquent Ruby
Elementary Set Theory, Part I
Student Solutions Manual for Strang's Linear Algebra and Its Applications
An Anthology
Analysis and Design
The uniqueness of this text in combining geometric topology and differential geometry lies in its unifying thread: the notion of a surface. With numerous illustrations, exercises and examples, the student comes to understand the relationship of the modern abstract approach to geometric intuition. The text is kept at a concrete level, avoiding unnecessary abstractions, yet never sacrificing mathematical rigor. The book includes topics not usually found in a single book at this level.
Collection of papers by leading researchers in computational mathematics, suitable for graduate students and researchers.
This book integrates the problem of violence into a larger framework, showing how economic and political behavior are closely linked.
Foundations of Mechanics is a mathematical exposition of classical mechanics with an introduction to the qualitative theory of dynamical systems and applications to the two-body problem and three-body problem.
United States Army Logistics, 1775-1992
A Novel
Crossing the River with Dogs
Vulnerable
Trust
Cognitive Enhancement
It’s easy to write correct Ruby code, but to gain the fluency needed to write great Ruby code, you must go beyond syntax and absorb the “Ruby way” of thinking and problem solving. In Eloquent Ruby, Russ Olsen helps you write Ruby like true Rubyists do–so you can leverage its immense, surprising power. Olsen draws on years of experience internalizing the Ruby culture and teaching Ruby to other programmers. He guides you to the “Ah Ha!” moments when it suddenly becomes clear why Ruby works the way it does, and how you can take advantage of this language’s elegance and expressiveness. Eloquent Ruby starts small, answering tactical questions focused on a single statement, method, test, or bug. You’ll learn how to write code that actually looks like Ruby (not Java or C#); why Ruby has so many control structures; how to use strings, expressions, and symbols; and what dynamic typing is really good for. Next, the book addresses bigger questions related to building methods and classes. You’ll discover why Ruby classes contain so many tiny methods, when to use operator overloading, and when to avoid it. Olsen explains how to write Ruby code that writes its own code–and why you’ll want to. He concludes with powerful project-level features and techniques ranging from gems to Domain Specific Languages. A part of the renowned Addison-Wesley Professional Ruby Series, Eloquent Ruby will help you “put on your Ruby-colored glasses” and get results that make you a true believer.
This book presents cutting-edge concepts on the question of trust. Written by leading experts, it investigates a paradoxical feature of contemporary society: while information and communication technologies, on the one hand, and scientific discourses, on the other, can promote more informed participation in public and democratic life, they have also led to a dramatic decline in our communicative and cooperative skills. The book analyzes the notion of trust from an interdisciplinary perspective by combining the normative (continental) and empirical (Anglo-American) approaches and by considering the political, epistemological, and historical transformations in the interpersonal relationships sparked by new technologies. Using trust as a model, it then investigates and clarifies the new types of participation that are made possible by scientific and technological advances.
" . . . that famous pedagogical method whereby one begins with the general and proceeds to the particular only after the student is too confused to understand even that anymore. " Michael Spivak This text was written as an antidote to topology courses such as Spivak It is meant to provide the student with an experience in geomet describes. ric topology. Traditionally, the only topology an undergraduate might see is point-set topology at a fairly abstract level. The next course the average stu dent would take would be a graduate course in algebraic topology, and such courses are commonly very homological in nature, providing quick access to current research, but not developing any intuition or geometric sense. I have tried in this text to provide the undergraduate with a pragmatic introduction to the field, including a sampling from point-set, geometric, and algebraic topology, and trying not to include anything that the student cannot immediately experience. The exercises are to be considered as an in tegral part of the text and, ideally, should be addressed when they are met, rather than at the end of a block of material. Many of them are quite easy and are intended to give the student practice working with the definitions and digesting the current topic before proceeding. The appendix provides a brief survey of the group theory needed.
Students who often complain when faced with challenging word problems will be engaged as they acquire essential problem solving skills that are applicable beyond the math classroom. The authors of Crossing the River with Dogs: Problem Solving for College Students: - Use the popular approach of explaining strategies through dialogs from fictitious students - Present all the classic and numerous non-traditional problem solving strategies (from drawing diagrams to matrix logic, and finite differences) - Provide a text suitable for students in quantitative reasoning, developmental mathematics, mathematics education, and all courses in between - Challenge students with interesting, yet concise problem sets that include classic problems at the end of each chapter With Crossing the River with Dogs, students will enjoy reading their text and will take with them skills they will use for a lifetime.
Mathematics: A Concise History and Philosophy
with Applications to Engineering and Science
Problem Solving for College Students
American Enchantment
A First Course in Abstract Mathematics