

teach myself algebra

Teach Myself Algebra: A Comprehensive Guide to Self-Learning

Introduction:

Are you staring down the barrel of an algebra textbook, feeling overwhelmed and unsure of where to begin? Do you dream of mastering algebraic concepts but lack the structure of a traditional classroom? This comprehensive guide is designed for you. "Teach Myself Algebra" isn't just a title; it's a roadmap to successfully navigating the world of equations, variables, and functions – all at your own pace. We'll break down the learning process into manageable chunks, provide practical strategies for overcoming common hurdles, and offer resources to support your self-directed learning journey. This isn't about passively absorbing information; it's about actively engaging with the material and building a strong, intuitive understanding of algebra. Get ready to unlock the power of algebraic thinking!

I. Laying the Foundation: Pre-Algebra Essentials

Before diving headfirst into the world of variables and equations, it's crucial to ensure a solid foundation in pre-algebra concepts. These foundational skills form the bedrock upon which your understanding of algebra will be built. This section covers:

Number Systems: Understanding different types of numbers (integers, rational numbers, irrational numbers, real numbers) and their relationships is paramount. Mastering operations within these systems (addition, subtraction, multiplication, division) is essential. Practice with varied problem types to build fluency.

Order of Operations (PEMDAS/BODMAS): This seemingly simple concept is fundamental. Understanding the correct sequence for performing mathematical operations (Parentheses/Brackets, Exponents/Orders, Multiplication and Division, Addition and Subtraction) will prevent countless errors later on. Practice problems with varying complexity levels are key here.

Fractions, Decimals, and Percentages: Fluency in converting between these forms and performing calculations with them is essential. Many algebraic problems involve fractions and decimals, so proficiency in these areas significantly impacts your overall understanding.

Basic Geometry: Understanding basic geometric concepts like area, perimeter, and volume will be helpful as you encounter geometric applications within algebra. This is not an in-depth study but a familiarization with essential terms and concepts.

II. Mastering the Fundamentals of Algebra

This is where the core concepts of algebra begin to unfold. We'll cover:

Variables and Expressions: Understanding variables as representations of unknown quantities and learning to manipulate algebraic expressions (combinations of numbers, variables, and operations) are crucial first steps. Practice simplifying expressions and evaluating them for given values.

Equations and Inequalities: This section delves into solving linear equations (equations with variables raised to the power of 1) and inequalities. Mastering techniques like combining like terms, isolating variables, and applying inverse operations is essential. Practice with a wide range of equation types.

Graphing Linear Equations: Visualizing equations through graphs enhances understanding. Learning to plot points, determine slopes and intercepts, and interpret graphs is critical. Use online graphing tools and practice sketching graphs by hand.

Solving Systems of Linear Equations: This involves solving for multiple variables simultaneously within a set of equations. Learn techniques like substitution and elimination to solve these systems and interpret their solutions geometrically.

III. Expanding Your Algebraic Horizons

This section builds upon the fundamental concepts, introducing more advanced topics:

Exponents and Polynomials: Understanding exponents and their properties is key to working with polynomials (expressions involving multiple terms with variables raised to different powers). Learn to add, subtract, multiply, and divide polynomials.

Factoring Polynomials: Factoring is the reverse of multiplication. Mastering factoring techniques (e.g., greatest common factor, difference of squares, trinomial factoring) is crucial for solving higher-degree equations.

Quadratic Equations: These equations involve variables raised to the power of 2. Learn to solve them using various methods (factoring, quadratic formula, completing the square) and interpret their solutions.

Radicals and Rational Exponents: Understanding radicals (square roots, cube roots, etc.) and their relationship to rational exponents expands your algebraic toolkit.

IV. Practical Application and Problem-Solving Strategies

Algebra isn't just about memorizing formulas; it's about applying these concepts to solve real-world problems. This section focuses on:

Word Problems: Learning to translate word problems into algebraic equations is a crucial skill.

Practice solving a variety of word problems related to different contexts (e.g., geometry, finance, physics).

Problem-Solving Techniques: Develop a systematic approach to problem-solving. Break down complex problems into smaller, manageable steps. Utilize diagrams, charts, or tables to visualize information.

Checking Your Work: Always check your solutions to ensure accuracy. Substitute your answers back into the original equations or verify your solutions through alternative methods.

V. Resources and Continued Learning

Continuous learning is essential for mastering algebra. This section highlights:

Online Resources: Utilize online resources like Khan Academy, Coursera, edX, and YouTube channels dedicated to mathematics for supplementary learning and practice.

Textbooks and Workbooks: Consider supplementing your learning with textbooks and workbooks for

additional practice problems and explanations.

Study Groups: Connecting with others learning algebra can provide support and motivation.

Consider forming or joining a study group for collaborative learning and problem-solving.

A Sample Textbook Outline: "Conquer Algebra"

Introduction: Welcome to the world of algebra! Overview of the course and learning objectives.

Chapter 1: Pre-Algebra Review: Covers number systems, order of operations, fractions, decimals, and basic geometry. Includes numerous practice problems and quizzes.

Chapter 2: Variables and Expressions: Introduces variables, algebraic expressions, and simplification techniques.

Chapter 3: Equations and Inequalities: Focuses on solving linear equations and inequalities, including applications.

Chapter 4: Graphing Linear Equations: Teaches how to graph linear equations, find slopes and intercepts, and interpret graphs.

Chapter 5: Systems of Linear Equations: Explores methods for solving systems of linear equations.

Chapter 6: Exponents and Polynomials: Covers exponents, polynomial operations, and factoring techniques.

Chapter 7: Quadratic Equations: Explores different methods for solving quadratic equations.

Chapter 8: Radicals and Rational Exponents: Introduces radicals, rational exponents, and their properties.

Chapter 9: Word Problems and Applications: Focuses on translating word problems into algebraic equations and solving them.

Conclusion: Review of key concepts and encouragement for continued learning. Includes a final exam.

(Detailed explanation of each chapter point would require expanding this response significantly beyond the requested word count. Each chapter would have numerous sub-sections with examples, exercises, and explanations.)

FAQs:

1. What is the best way to learn algebra by myself? A structured approach combining textbooks, online resources, and consistent practice is most effective.

1. How much time should I dedicate to learning algebra each day? Aim for at least 30-60 minutes of focused study daily, adjusting based on your learning pace and comprehension.

1. What if I get stuck on a problem? Seek help online, consult textbooks, watch explanatory videos, or join a study group. Don't be afraid to ask for assistance!

1. Are there any free online resources to help me learn algebra? Yes, Khan Academy, Coursera, and YouTube offer numerous free algebra courses and tutorials.
1. How can I improve my problem-solving skills in algebra? Practice consistently, break down complex problems into smaller parts, and check your work thoroughly.
1. Is it important to understand the underlying concepts in algebra, or is it enough to just memorize formulas? Understanding the underlying concepts is crucial for applying algebra effectively and solving diverse problems.
1. What are some common mistakes to avoid when learning algebra? Careless errors in calculations, ignoring order of operations, and not checking solutions are common pitfalls.
1. Can I teach myself advanced algebra topics without a strong foundation in basic algebra? No, a solid foundation in basic algebra is essential before tackling more advanced topics.
1. How do I know if I'm ready to move on to the next topic in algebra? If you can consistently solve problems and understand the underlying concepts, you're ready to progress.

Related Articles:

1. Algebra for Beginners: A Step-by-Step Guide: A simplified introduction to fundamental algebraic concepts.
2. Solving Linear Equations: A Comprehensive Tutorial: A detailed explanation of solving linear equations with various techniques.
3. Mastering Quadratic Equations: Techniques and Applications: A focused guide on solving quadratic equations.
4. Understanding Polynomials: From Basics to Advanced Concepts: A thorough exploration of polynomial operations and factoring.

5. Graphing Linear Equations: A Visual Approach to Algebra: A visual guide to understanding linear equations through graphing.
6. Algebra Word Problems: Strategies for Success: A guide to effectively solving word problems in algebra.
7. Algebraic Expressions and Simplification Techniques: A focus on simplifying and manipulating algebraic expressions.
8. Systems of Linear Equations: Methods and Applications: A detailed look at solving systems of linear equations.
9. The Importance of Algebra in Real-World Applications: An exploration of how algebra is used in various fields.

teach myself algebra: Teach Yourself Algebra P. Abbott, 2012-06 Many of the earliest books, particularly those dating back to the 1900s and before, are now extremely scarce and increasingly expensive. We are republishing these classic works in affordable, high quality, modern editions, using the original text and artwork.

teach myself algebra: Calculus: A Complete Introduction Hugh Neill, 2013-05-31 Calculus: A Complete Introduction is the most comprehensive yet easy-to-use introduction to using calculus. Written by a leading expert, this book will help you if you are studying for an important exam or essay, or if you simply want to improve your knowledge. The book covers all areas of calculus, including functions, gradients, rates of change, differentiation, exponential and logarithmic functions and integration. Everything you will need to know is here in one book. Each chapter includes not only an explanation of the knowledge and skills you need, but also worked examples and test questions.

teach myself algebra: Practical Algebra Peter H. Selby, Steve Slavin, 1991-09-03 Practical Algebra If you studied algebra years ago and now need a refresher course in order to use algebraic principles on the job, or if you're a student who needs an introduction to the subject, here's the perfect book for you. Practical Algebra is an easy and fun-to-use workout program that quickly puts you in command of all the basic concepts and tools of algebra. With the aid of practical, real-life examples and applications, you'll learn: * The basic approach and application of algebra to problem solving * The number system (in a much broader way than you have known it from arithmetic) * Monomials and polynomials; factoring algebraic expressions; how to handle algebraic fractions; exponents, roots, and radicals; linear and fractional equations * Functions and graphs; quadratic equations; inequalities; ratio, proportion, and variation; how to solve word problems, and more Authors Peter Selby and Steve Slavin emphasize practical algebra throughout by providing you with techniques for solving problems in a wide range of disciplines--from engineering, biology, chemistry, and the physical sciences, to psychology and even sociology and business administration. Step by step, Practical Algebra shows you how to solve algebraic problems in each of these areas, then allows you to tackle similar problems on your own, at your own pace. Self-tests are provided at the end of each chapter so you can measure your mastery.

teach myself algebra: Algebra I.M. Gelfand, Alexander Shen, 2003-07-09 This book is about algebra. This is a very old science and its gems have lost their charm for us through everyday use. We have tried in this book to refresh them for you. The main part of the book is made up of problems. The best way to deal with them is: Solve the problem by yourself - compare your solution

with the solution in the book (if it exists) - go to the next problem. However, if you have difficulties solving a problem (and some of them are quite difficult), you may read the hint or start to read the solution. If there is no solution in the book for some problem, you may skip it (it is not heavily used in the sequel) and return to it later. The book is divided into sections devoted to different topics. Some of them are very short, others are rather long. Of course, you know arithmetic pretty well. However, we shall go through it once more, starting with easy things.

2 Exchange of terms in addition Let's add 3 and 5: $3+5=8$. And now change the order: $5+3=8$. We get the same result. Adding three apples to five apples is the same as adding five apples to three - apples do not disappear and we get eight of them in both cases.

3 Exchange of terms in multiplication Multiplication has a similar property. But let us first agree on notation.

teach myself algebra: Abstract Algebra Dan Saracino, 2008-09-02 The Second Edition of this classic text maintains the clear exposition, logical organization, and accessible breadth of coverage that have been its hallmarks. It plunges directly into algebraic structures and incorporates an unusually large number of examples to clarify abstract concepts as they arise. Proofs of theorems do more than just prove the stated results; Saracino examines them so readers gain a better impression of where the proofs come from and why they proceed as they do. Most of the exercises range from easy to moderately difficult and ask for understanding of ideas rather than flashes of insight. The new edition introduces five new sections on field extensions and Galois theory, increasing its versatility by making it appropriate for a two-semester as well as a one-semester course.

teach myself algebra: The Learning and Teaching of Algebra Abraham Arcavi, Paul Drijvers, Kaye Stacey, 2016-06-23 IMPACT (Interweaving Mathematics Pedagogy and Content for Teaching) is an exciting new series of texts for teacher education which aims to advance the learning and teaching of mathematics by integrating mathematics content with the broader research and theoretical base of mathematics education. The Learning and Teaching of Algebra provides a pedagogical framework for the teaching and learning of algebra grounded in theory and research. Areas covered include: • Algebra: Setting the Scene • Some Lessons From History • Seeing Algebra Through the Eyes of a Learner • Emphases in Algebra Teaching • Algebra Education in the Digital Era This guide will be essential reading for trainee and qualified teachers of mathematics, graduate students, curriculum developers, researchers and all those who are interested in the problématique of teaching and learning algebra. It allows you to get involved in the wealth of knowledge that teachers can draw upon to assist learners, helping you gain the insights that mastering algebra provides.

teach myself algebra: Learning How to Learn Barbara Oakley, PhD, Terrence Sejnowski, PhD, Alistair McConville, 2018-08-07 A surprisingly simple way for students to master any subject--based on one of the world's most popular online courses and the bestselling book *A Mind for Numbers* *A Mind for Numbers* and its wildly popular online companion course *Learning How to Learn* have empowered more than two million learners of all ages from around the world to master subjects that they once struggled with. Fans often wish they'd discovered these learning strategies earlier and ask how they can help their kids master these skills as well. Now in this new book for kids and teens, the authors reveal how to make the most of time spent studying. We all have the tools to learn what might not seem to come naturally to us at first--the secret is to understand how the brain works so we can unlock its power. This book explains: Why sometimes letting your mind wander is an important part of the learning process How to avoid rut think in order to think outside the box Why having a poor memory can be a good thing The value of metaphors in developing understanding A simple, yet powerful, way to stop procrastinating Filled with illustrations, application questions, and exercises, this book makes learning easy and fun.

teach myself algebra: The Joy of X Steven Henry Strogatz, 2012 A delightful tour of the greatest ideas of math, showing how math intersects with philosophy, science, art, business, current events, and everyday life, by an acclaimed science communicator and regular contributor to the New York Times.

teach myself algebra: Teaching and Learning Algebraic Thinking with 5- to 12-Year-Olds

Carolyn Kieran, 2017-12-04 This book highlights new developments in the teaching and learning of algebraic thinking with 5- to 12-year-olds. Based on empirical findings gathered in several countries on five continents, it provides a wealth of best practices for teaching early algebra. Building on the work of the ICME-13 (International Congress on Mathematical Education) Topic Study Group 10 on Early Algebra, well-known authors such as Luis Radford, John Mason, Maria Blanton, Deborah Schifter, and Max Stephens, as well as younger scholars from Asia, Europe, South Africa, the Americas, Australia and New Zealand, present novel theoretical perspectives and their latest findings. The book is divided into three parts that focus on (i) epistemological/mathematical aspects of algebraic thinking, (ii) learning, and (iii) teaching and teacher development. Some of the main threads running through the book are the various ways in which structures can express themselves in children's developing algebraic thinking, the roles of generalization and natural language, and the emergence of symbolism. Presenting vital new data from international contexts, the book provides additional support for the position that essential ways of thinking algebraically need to be intentionally fostered in instruction from the earliest grades.

teach myself 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.

teach myself algebra: *Tasks and Competencies in the Teaching and Learning of Algebra* Alex Friedlander, Abraham Arcavi, 2018-02-28 Tasks and Competencies in the Teaching and Learning of Algebra provides a conceptual approach that will encourage students learning algebra to employ a variety of thinking processes and strategies and, most importantly, will enable them to truly understand the concepts that underlie the problems they are solving. The authors' framework develops those skills and competencies, aligned with the goals of the Common Core State Standards, that are necessary for an integrated, conceptual learning of algebra. The book's four chapters include tasks focusing on algebraic expressions, equations, and functions, followed by tasks that integrate several mathematical concepts. Each of the 48 tasks in this book contains: a classroom-ready task, with items arranged by increasing order of complexity a discussion of the task's main ideas and objectives solutions for each item in the task, with suggestions of various methods that students might use; and a listing of the essential competencies that students can develop by working on the task. All 48 tasks are also available at NCTM's More4U website as downloadable and printable worksheets to hand out to students. With its strong conceptual framework, Tasks and Competencies in the Teaching and Learning of Algebra is designed to enable teachers, teacher educators, and curriculum designers to help students at all levels master the ideas and practices found in algebra and to develop skills they can use throughout their mathematics education.

teach myself algebra: Mathematics for the Nonmathematician Morris Kline, 2013-04-15 Erudite and entertaining overview follows development of mathematics from ancient Greeks to present. Topics include logic and mathematics, the fundamental concept, differential calculus, probability theory, much more. Exercises and problems.

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teach myself algebra: *The Future of the Teaching and Learning of Algebra* Kaye Stacey, Helen Chick, Margaret Kendal, 2006-04-11 Kaye Stacey, Helen Chick, and Margaret Kendal The University

of Melbourne, Australia Abstract: This section reports on the organisation, procedures, and publications of the ICMI Study, The Future of the Teaching and Learning of Algebra. Key words: Study Conference, organisation, procedures, publications The International Commission on Mathematical Instruction (ICMI) has, since the 1980s, conducted a series of studies into topics of particular significance to the theory and practice of contemporary mathematics education. Each ICMI Study involves an international seminar, the “Study Conference”, and culminates in a published volume intended to promote and assist discussion and action at the international, national, regional, and institutional levels. The ICMI Study running from 2000 to 2004 was on The Future of the Teaching and Learning of Algebra, and its Study Conference was held at The University of Melbourne, Australia from December to 2001. It was the first study held in the Southern Hemisphere. There are several reasons why the future of the teaching and learning of algebra was a timely focus at the beginning of the twenty first century. The strong research base developed over recent decades enabled us to take stock of what has been achieved and also to look forward to what should be done and what might be achieved in the future. In addition, trends evident over recent years have intensified. Those particularly affecting school mathematics are the “massification” of education—continuing in some countries whilst beginning in others—and the advance of technology.

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teach myself algebra: *Practical Algebra* Bobson Wong, Larisa Bukalov, Steve Slavin, 2022-04-26 The most practical, complete, and accessible guide for understanding algebra If you want to make sense of algebra, check out Practical Algebra: A Self-Teaching Guide. Written by two experienced classroom teachers, this Third Edition is completely revised to align with the Common Core Algebra I math standards used in many states. You’ll get an overview of solving linear and quadratic equations, using ratios and proportions, decoding word problems, graphing and interpreting functions, modeling the real world with statistics, and other concepts found in today’s algebra courses. This book also contains a brief review of pre-algebra topics, including arithmetic and fractions. It has concrete strategies that help diverse students to succeed, such as: over 500 images and tables that illustrate important concepts over 200 model examples with complete solutions almost 1,500 exercises with answers so you can monitor your progress Practical Algebra emphasizes making connections to what you already know and what you’ll learn in the future. You’ll learn to see algebra as a logical and consistent system of ideas and see how it connects to other mathematical topics. This book makes math more accessible by treating it as a language. It has tips for pronouncing and using mathematical notation, a glossary of commonly used terms in algebra, and a glossary of symbols. Along the way, you’ll discover how different cultures around the world over thousands of years developed many of the mathematical ideas we use today. Since students nowadays can use a variety of tools to handle complex modeling tasks, this book contains technology tips that apply no matter what device you’re using. It also describes strategies for avoiding common mistakes that students make. By working through Practical Algebra, you’ll learn straightforward techniques for solving problems, and understand why these techniques work so you’ll retain what you’ve learned. You (or your students) will come away with better scores on algebra tests and a greater confidence in your ability to do math.

teach myself algebra: *Teach Yourself Algebra for Electronic Circuits* Kenneth Jenkins, 2001-08-27 Practical math to help you plan, design, and problem-solve electric circuits The ideal tool

for upgrading career-enhancing math skills, Teach Yourself Algebra for Electronic Circuits helps you learn the methods that support today's technological growth and innovation. Author Ken Jenkins has put together a genuinely user-friendly tutorial. Every chapter is a self-contained unit, making it easier to find the answers you want and learn at your own pace - without flipping through pages, looking for connections or background. Learn or upgrade your skills with: * Self-teaching text, complete with worked-out questions/solutions and final exams * Math that goes beyond elementary algebra, without the burden of heavy-duty calculus you don't need * Circuit-focused applications, illustrations, and examples * Special help with the algebra of logic and matrices * Hundreds of practical problems with detailed solutions throughout the book * Over 300 illustrations to help you learn quickly and easily

teach myself algebra: Alpha Teach Yourself Algebra I in 24 Hours Jane Cook, 2011-01-04
The first step in complex math is now the easiest. Alpha Teach Yourself Algebra I in 24 Hours provides readers with a structured, self-paced, straight-forward tutorial to algebra. It's the perfect textbook companion for students struggling with algebra, a solid primer for those looking to get a head start on an upcoming class, and a welcome refresher for parents tasked with helping out with homework, all in 24 one-hour lessons. • Algebra is the second-most popular mathematic course for college-bound high school students • Nearly all college-bound high school students now take algebra

teach myself algebra: Learning Modern Algebra Albert Cuoco, Joseph Rotman, 2013 A guide to modern algebra for mathematics teachers. It makes explicit connections between abstract algebra and high-school mathematics.

teach myself algebra: Learning Abstract Algebra with ISETL Ed Dubinsky, Uri Leron, 1994
Most students in abstract algebra classes have great difficulty making sense of what the instructor is saying. Moreover, this seems to remain true almost independently of the quality of the lecture. This book is based on the constructivist belief that, before students can make sense of any presentation of abstract mathematics, they need to be engaged in mental activities which will establish an experiential base for any future verbal explanation. No less, they need to have the opportunity to reflect on their activities. This approach is based on extensive theoretical and empirical studies as well as on the substantial experience of the authors in teaching abstract algebra. The main source of activities in this course is computer constructions, specifically, small programs written in the mathlike programming language ISETL; the main tool for reflections is work in teams of 2-4 students, where the activities are discussed and debated. Because of the similarity of ISETL expressions to standard written mathematics, there is very little programming overhead: learning to program is inseparable from learning the mathematics. Each topic is first introduced through computer activities, which are then followed by a text section and exercises. This text section is written in an informed, discursive style, closely relating definitions and proofs to the constructions in the activities. Notions such as cosets and quotient groups become much more meaningful to the students than when they are presented in a lecture.

teach myself algebra: Algebra: A Complete Introduction Hugh Neill, 2018-04-19 Algebra: A Complete Introduction is the most comprehensive yet easy-to-use introduction to using Algebra. Written by a leading expert, this book will help you if you are studying for an important exam or essay, or if you simply want to improve your knowledge. The book covers all the key areas of algebra including elementary operations, linear equations, formulae, simultaneous equations, quadratic equations, logarithms, variation, laws and sequences. Everything you will need is here in this one book. Each chapter includes not only an explanation of the knowledge and skills you need, but also worked examples and test questions. Chapter 1: The meaning of algebra Chapter 2: Elementary operations in algebra Chapter 3: Brackets and operations with them Chapter 4: Positive and negative numbers Chapter 5: Equations and expressions Chapter 6: Linear equations Chapter 7: Formulae Chapter 8: Simultaneous equations Chapter 9: Linear inequalities Chapter 10: Straight-line graphs; coordinates Chapter 11: Using inequalities to define regions Chapter 12: Multiplying algebraical expressions Chapter 13: Factors Chapter 14: Fractions Chapter 15: Graphs

of quadratic functions Chapter 16: Quadratic equations Chapter 17: Indices Chapter 18: Logarithms Chapter 19: Ratio and proportion Chapter 20: Variation Chapter 21: The determination of laws Chapter 22: Rational and irrational numbers and surds Chapter 23: Arithmetical and geometric sequences

teach myself algebra: *Understand Algebra: A Teach Yourself Guide* Paul Abbott, Hugh Neill, 2011-01-10 More than 60 million Teach Yourself products sold worldwide! A helpful guide for students struggling with algebra Understand Algebra provides everything you need to broaden your skills and gain confidence. Assuming only a basic level of arithmetic, this carefully graded and progressive book guides them through the basic principles of the subject with the help of exercises and fully worked examples. Includes: One, five and ten-minute introductions to key principles to get you started Lots of instant help with common problems and quick tips for success, based on the author's many years of experience Tests in the book to keep track of your progress Exercises and examples with full answers allow you to practice your new skills progressively Topics include: The meaning of algebra; Elementary operations in algebra; Brackets and operations with them; Positive and negative numbers; Expressions and equations; Linear equations; Formulae; Simultaneous equations; Linear inequalities; Graphical representation of quantities; Straight line graphs; coordinates; Using inequalities to define regions; Multiplying algebraicalalgebraics; Factors; Fractions; Graphs of quadratic functions; Quadratic equations; Indices; Logarithms; Ratio and proportion; Variation; The determination of laws; Rational and irrational numbers; Arithmetical and geometrical sequences

teach myself algebra: *Linear Algebra For Dummies* Mary Jane Sterling, 2009-06-05 Learn to: Solve linear algebra equations in several ways Put data in order with matrices Determine values with determinants Work with eigenvalues and eigenvectors Your hands-on guide to real-world applications of linear algebra Does linear algebra leave you feeling lost? No worries this easy-to-follow guide explains the how and the why of solving linear algebra problems in plain English. From matrices to vector spaces to linear transformations, you'll understand the key concepts and see how they relate to everything from genetics to nutrition to spotted owl extinction. Line up the basics discover several different approaches to organizing numbers and equations, and solve systems of equations algebraically or with matrices Relate vectors and linear transformations link vectors and matrices with linear combinations and seek solutions of homogeneous systems Evaluate determinants see how to perform the determinant function on different sizes of matrices and take advantage of Cramer's rule Hone your skills with vector spaces determine the properties of vector spaces and their subspaces and see linear transformation in action Tackle eigenvalues and eigenvectors define and solve for eigenvalues and eigenvectors and understand how they interact with specific matrices Open the book and find: Theoretical and practical ways of solving linear algebra problems Definitions of terms throughout and in the glossary New ways of looking at operations How linear algebra ties together vectors, matrices, determinants, and linear transformations Ten common mathematical representations of Greek letters Real-world applications of matrices and determinants

teach myself algebra: A Synopsis of Elementary Results in Pure and Applied Mathematics George Shoobridge Carr, 1880

teach myself algebra: Deep Learning for Coders with fastai and PyTorch Jeremy Howard, Sylvain Gugger, 2020-06-29 Deep learning is often viewed as the exclusive domain of math PhDs and big tech companies. But as this hands-on guide demonstrates, programmers comfortable with Python can achieve impressive results in deep learning with little math background, small amounts of data, and minimal code. How? With fastai, the first library to provide a consistent interface to the most frequently used deep learning applications. Authors Jeremy Howard and Sylvain Gugger, the creators of fastai, show you how to train a model on a wide range of tasks using fastai and PyTorch. You'll also dive progressively further into deep learning theory to gain a complete understanding of the algorithms behind the scenes. Train models in computer vision, natural language processing, tabular data, and collaborative filtering Learn the latest deep learning techniques that matter most

in practice Improve accuracy, speed, and reliability by understanding how deep learning models work Discover how to turn your models into web applications Implement deep learning algorithms from scratch Consider the ethical implications of your work Gain insight from the foreword by PyTorch cofounder, Soumith Chintala

teach myself 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.

teach myself algebra: Algebra Made Simple Theresa Kane McKell, 2001-08-28 Contains variety of activities to help students gain an understanding of algebraic concepts covered in most algebra 1 courses by using everyday applications.

teach myself algebra: Teaching and Learning Algebra Heidi Strømskag Måsøval, Yves Chevallard, 2016-05-04 The book is based on a longitudinal study of beginning teachers' struggles with algebra, with strong foundation in the theory of didactical situations (Brousseau, 1997). The focus is on factors that constrain students' engagement with algebraic generality in shape patterns. Participants in the study are six student teachers and two teacher educators of mathematics. The empirical material consists of videotaped classroom observations and the mathematical tasks with which the students engaged. Three analytic categories emerged from an open coding process which show that the students' algebraic generalization is constrained by: 1) a limited feedback potential in situations where the students are supposed to solve the mathematical tasks without teacher intervention; 2) obstacles the students face when they shall transform into algebraic notation formulae they have expressed informally in natural language; and, 3) challenges with justification of formulae and mathematical statements that the students have proposed. This book provides many practical and concrete examples to guide mathematics education researchers, mathematics teacher educators, and mathematics educators in teaching algebra in a variety of contexts and environments.

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