

120 hour Summer Algebra I for Credit

Textbook: Prentice Hall Algebra I

Chapter 1: Foundations for Algebra

- 1-1 Variables and Expressions
- 1-2 Order of Operations and Evaluating Expressions
- 1-3 Real Numbers and the Number Line
- 1-4 Properties of Real Numbers
- 1-5 Adding and Subtracting Real Numbers
- 1-6 Multiplying and Dividing Real Numbers
- 1-7 The Distributive Property
- 1-8 An Introduction to Equations

Chapter 2: Solving Equations

- 2-1 Solving One-Step Equations
- 2-2 Solving Two-Step Equations
- 2-3 Solving Multi-Step Equations
- 2-4 Solving Equations with Variables on Both Sides
- 2-5 Literal Equations and Formulas
- 2-6 Ratios, Rates, and Conversions
- 2-7 Solving Proportions
- 2-8 Proportions and Similar Figures
- 2-9 Percents
- 2-10 Change Expressed as a Percent

Chapter 3: Solving Inequalities

- 3-1 Inequalities and Their Graphs
- 3-2 Solving Inequalities Using Addition or Subtraction
- 3-3 Solving Inequalities Using Multiplication or Division
- 3-4 Solving Multi-Step Inequalities
- 3-5 Working with Sets
- 3-6 Compound Inequalities
- 3-7 Absolute Value Equations and Inequalities
- 3-8 Unions and Intersections of Sets

Chapter 4: An Introduction to Functions

- 4-2 Patterns and Linear Functions
- 4-3 Patterns and Nonlinear Functions
- 4-4 Graphing a Function Rule
- 4-5 Writing a Function Rule
- 4-6 Formalizing Relations and Functions

Chapter 5: Linear Functions

- 5-1 Rate of Change and Slope
- 5-2 Direct Variation
- 5-3 Slope-Intercept Form
- 5-4 Point-Slope Form
- 5-5 Standard Form
- 5-6 Parallel and Perpendicular Lines
- 5-8 Graphing Absolute Value Functions

Chapter 6: Systems of Equations and Inequalities

- 6-1 Solving Systems by Graphing
- 6-2 Solving Systems Using Substitution
- 6-3 Solving Systems Using Elimination
- 6-5 Linear Inequalities
- 6-6 Systems of Linear Inequalities

Chapter 7: Exponents and Exponential Functions

- 7-1 Zero and Negative Exponents
- 7-3 Multiplying Powers with the Same Base
- 7-4 More Multiplication Properties of Exponents
- 7-5 Division Properties of Exponents
- 7-6 Exponential Functions
- 7-7 Exponential Growth and Decay

Chapter 8: Polynomials and Factoring

- 8-1 Adding and Subtracting Polynomials
- 8-2 Multiplying and Factoring
- 8-3 Multiplying Binomials
- 8-4 Multiplying Special Cases
- 8-5 Factoring $x^2 + bx + c$
- 8-6 Factoring $ax^2 + bx + c$
- 8-7 Factoring Special Cases
- 8-8 Factoring by Grouping

Chapter 9: Quadratic Functions and Equations

- 9-1 Quadratic Graphs and Their Properties
- 9-2 Quadratic Functions
- 9-3 Solving Quadratic Equations
- 9-4 Factoring to Solve Quadratic Equations
- 9-5 Completing the Square
- 9-6 The Quadratic Formula and the Discriminant
- 9-8 Systems of Linear and Quadratic Equations

Chapter 10: Radical Expressions and Equations

- 10-1 The Pythagorean
- 10-2 Simplifying Radicals
- 10-3 Operations with Radical Expressions
- 10-4 Solving Radical Equations
- 10-5 Graphing Square Root Functions
- 10-6 Trigonometric Ratios

Chapter 11: Rational Expressions and Functions

- 11-1 Simplifying Rational Expressions
- 11-2 Multiplying and Dividing Rational Expressions
- 11-3 Dividing Polynomials
- 11-4 Adding and Subtracting Rational Expressions
- 11-5 Solving Rational Equations
- 11-6 Inverse Variation
- 11-7 Graphing Rational Equations

(if time allows):

Chapter 12: Data Analysis and Probability

- 12-6 Permutations and Combinations
- 12-7 Theoretical and Experimental Probability
- 12-8 Probability of Compound Events Conditional Probability