

Algebra I

1. Preparing for Algebra

1.1 Simplifying Algebraic Expressions

- 1.1.1 Identifying and Combining Like Terms
- 1.1.2 Simplifying Expressions
- 1.1.3 Build Expressions from Word Phrases
- 1.1.4 Evaluate Expressions for given Values of Variables

1.2 Relation, Addition and Subtraction of Real Numbers

- 1.2.1 Equalities and Inequalities
- 1.2.2 Add and Subtract Real Numbers
- 1.2.3 Multiply and Divide Real Numbers

1.3 Order of Operations; Properties of Real Numbers

- 1.3.1 Use Factors, Exponents, and Roots
- 1.3.2 Use Order of Operations
- 1.3.3 Properties of Real Numbers; Distributive Property

2. Solving Equations

2.1 Solving Linear Equations in One Variable

- 2.1.1 Identify and Verify Solutions of Linear Equations
- 2.1.2 Solve One-Step Equations
- 2.1.3 Solving Equations of the Type $ax + b = c$
- 2.1.4 Use Distributive Property to Solve Equations
- 2.1.5 Solve General Linear Equations
- 2.1.6 Solve Equations with Fractions and Decimals
- 2.1.7 Equations with No Solutions or many Solutions

2.2 Literal Equations

- 2.2.1 Solve for One Variable, Given the Values of Others
- 2.2.2 Solve for One Variable in Terms of Other Variable
- 2.2.3 Use of Formulas for Applications

2.3 Find Fraction Notation for a Ratio or a Rate

- 2.3.1 Converting Ratios/Rates to Fraction
- 2.3.2 Converting Rates to Unit Rates

2.4 Solving Proportions

- 2.4.1 Checking and Solving Proportions
- 2.4.2 Solving Applications Using Proportions

2.5 Percents, Conversion to Decimals and Fractions

- 2.5.1 Understanding Percents
- 2.5.2 Convert Percent - Fraction - Decimal

2.6 Percent Problems using Percent Equations/ Proportions

2.6.1 Solve Problems Using the Percent Proportion/Formula

3. Solving Inequalities

3.1 Solutions of Linear Inequalities

- 3.1.1 Intervals and Their Graphs
- 3.1.2 Addition Property of Inequality
- 3.1.3 Multiplication Property of Inequality
- 3.1.4 Solving Linear Inequalities
- 3.1.5 Three Part Inequalities
- 3.1.6 Translating Statements of Inequality

3.2 Absolute Value Equations and Inequalities

- 3.2.1 Solve Simple Equations Involving Absolute Value
- 3.2.2 Solve Simple Inequalities Involving Absolute Value
- 3.2.3 Absolute Value Equations or Inequalities with No Solution

3.3 Sets: Basic Terms and Notations

- 3.3.1 Sets and Set Notations
- 3.3.2 Subsets and Notations
- 3.3.3 Determine the Union/Intersection of Two or More Sets

4. An Introduction to functions

4.1 Relations and Functions

- 4.1.1 Introduction to Relations
- 4.1.2 Introduction to Functions
- 4.1.3 Graph of a Function

4.2 Graph Linear Equations in Two Variables

- 4.2.1 Graphing a Linear Equation using Points
- 4.2.2 Graphing a Linear Equation using Intercepts

5. Linear Functions

5.1 Slope of a Line/ Recognize Parallel and Perpendicular Lines

- 5.1.1 Slope of a Line Through Two Given Points
- 5.1.2 Slopes of Parallel and Perpendicular Lines

5.2 Equation of a Line

- 5.2.1 Slope-Intercept Form Equation of a Line and Graphing
- 5.2.2 Equation of a Line given Slope and any Point on the Line
- 5.2.3 Equation of a Line in Two-Point Form
- 5.2.4 Writing Equations in Slope Intercept or Standard Form

6. System of Linear Equations

6.1 Solve by Graphing

6.1.1 Identifying a Solution of a System of Linear Equations

6.1.2 Solve by Graphing

6.2 Solving Using Substitution or Elimination Method

6.2.1 Solve Linear Systems by Substitution and Addition Method

6.2.2 Applications of System of Equations

7. Exponents and Exponential Functions

7.1 Exponents

7.1.1 Exponents, and Product Rule

7.1.2 Power Rules for Exponents

7.2 Integer Exponents

7.2.1 Negative Exponents

7.2.2 Quotient Rule for Integer Exponents

7.3 Rational Exponents

7.3.1 Define and Use $a^{(1/n)}$ and $a^{(m/n)}$; and Simplify Radicals

7.4 Pythagorean Theorem Application

7.4.1 Using the Pythagorean Theorem

8. Statistics and Probability

8.1 Central Tendency Measures

8.1.1 Find the Mean, Median, Mode, and Range of a Data

8.2 Probability

8.2.1 Chance and Probability