2020-2021 Idea Math Online Program (School Enrichment)

ALGEBRA 1 CONTENTS

Session I (Chapter 1—Chapter 5)

Chapter 1 Properties of Real Numbers

- ❖ 1.1 The Real Number Line
- ❖ 1.2 Addition of Real Numbers
- ❖ 1.3 Subtraction of Real Numbers
- ❖ 1.4 Multiplication of Real Numbers
- ❖ 1.5 Division of Real Numbers
- ❖ 1.6 Algebraic Expressions

Chapter 2 Solving Linear Equations

- ❖ 2.1 Solving Linear Equations Using Addition and Subtraction
- ❖ 2.2 Solving Linear Equations Using Multiplication and Division
- 2.3 Solving Multi-Step Equations
- ❖ 2.4 Linear Equations and Problem Solving
- ❖ 2.5 Formulas and Functions
- ❖ 2.6 Rates, Ratios, and Percents

Chapter 3 Graphing Linear Equations

- ❖ 3.1 An Introduction of Functions
- ❖ 3.2 The Slope of a Line
- **❖** 3.3 Graphing Linear Equations
- ❖ 3.4 Quick Graphs Using Intercepts or Slope-Intercept Form
- ❖ 3.5 Parallel Lines and Perpendicular Lines
- ❖ 3.6 Direct Variation

Chapter 4 Writing Linear Equations

- ❖ 4.1 Writing Linear Equations in Slope-Intercept Form
- ❖ 4.2 Writing Linear Equations Given the Slope and a Point
- ❖ 4.3 Writing Linear Equations Given Two Points
- ❖ 4.4 Point-Slope Form of a Linear Equations
- ❖ 4.5 The Standard Form of a Linear Equation
- ❖ 4.6 Fitting a Line to Data

Chapter 5 Solving and Graphing Linear Inequalities

- ❖ 5.1 Solving Linear Inequality in One Variable
- ❖ 5.2 Solving Compound Inequalities
- ❖ 5.3 Solving Absolute-Value Equations and Inequalities
- ❖ 5.4 Graphing Linear Inequalities in Two Variables
- ❖ 5.5 Region Area

2020-2021 Idea Math Online Program (School Enrichment) ALGEBRA 1 CONTENTS

Session II (Chapter 6 – Chapter 10)

Chapter 6 Systems of Linear Equations and Inequalities

- ❖ 6.1 Solving Linear Systems by Graphing
- ❖ 6.2 Solving Linear Systems by Substitution or by Linear Combinations
- ❖ 6.3 Application of Linear Systems
- ❖ 6.4 Special Types of Linear Systems
- ❖ 6.5 Solving Linear Systems in Three Variables
- ❖ 6.6 Solving Systems of Linear Inequalities

Chapter 7 Exponents and Exponential Functions

- ❖ 7.1 Multiplication Properties of Exponents
- ❖ 7.2 Zero and Negative Exponents
- ❖ 7.3 Division Properties of Exponents
- ❖ 7.4 Scientific Notation
- ❖ 7.5 Exponential Growth Functions
- ❖ 7.6 Exponential Decay Functions

Chapter 8 Polynomials and Factoring

- ❖ 8.1 Classifying Polynomials by Degree and Number of Terms
- ❖ 8.2 Adding and Subtracting Polynomials
- 8.3 Multiplying Polynomials
- ❖ 8.4 Special Products of Polynomials
- 8.5 Factoring $x^2 + bx + c$ and $ax^2 + bx + c$
- ❖ 8.6 Factoring Special Products and More

Chapter 9 Quadratic Functions

- 9.1 Graphing Quadratic Functions
- ❖ 9.2 Writing and Graphing Quadratic Functions in Vertical Form
- ❖ 9.3 Graphing Quadratic Functions in Standard Form
- 9.4 Graphing Quadratic Inequalities
- ❖ 9.5 Comparing Linear, Exponential, and Quadratic Models

Chapter 10 Quadratic Equations

- ❖ 10.1 Simplifying Radicals
- ❖ 10.2 Solving Quadratic Equations by Finding Square Roots
- ❖ 10.3 Solving Quadratic Equations in Factored Form
- ❖ 10.4 Solving Quadratic Equations by the Quadratic Formula
- ❖ 10.5 Application of the Discriminant
- ❖ 10.6 Problem Solving Using Quadratic Equations