



In *Mastering Algebra I: Course II*, students investigate polynomial expressions and operations in problems that arise from real-life situations. Students refine and expand their skills through interactions, practice problems, and workout questions. With these skills in hand, they graph parabolas and identify relationships between graphs and equations. Following this analytic investigation, students use a variety of techniques to solve equations in one variable, including applying the quadratic formula.

# Destination Math™

## Mastering Algebra I: Course II grades 9-12

### Scope and Sequence

#### 1 THE REAL NUMBER SYSTEM

- 1.1 Rational and Irrational Numbers
  - Defining the Real Numbers
  - Working with Radicals
  - The Square Root Function

#### 2 POWERS AND POLYNOMIALS

- 2.1 Polynomial Arithmetic
  - Working with Powers
  - Adding and Subtracting Polynomial Expressions
  - Multiplying Polynomials
- 2.2 Factoring Polynomials
  - Finding Common Factors
  - Factoring Quadratic Trinomials
  - Special Cases

#### 3 QUADRATIC FUNCTIONS

- 3.1 Graphing Quadratic Functions and Equations
  - Graphing Parabolas
  - Analyzing Properties of Parabolas
  - Solving Quadratic Equations by Graphing
- 3.2 Solving Quadratic Equations Using Algebra
  - Factoring and the Zero Product Theorem
  - The Square Root Method and Completing the Square
  - The Quadratic Formula

#### 4 ALGEBRAIC EXPRESSIONS

- 4.1 Radical Equations and Functions
  - Solving Radical Equations
  - The Inverse of the Square Root Function
- 4.2 Rational Expressions, Equations, and Functions
  - Rational Operations
  - Rational Functions
  - Rational Equations

#### 5 DESCRIBING DATA

- 5.1 Graphical Displays
  - Stem-and-Leaf Plots and Box Plots
  - Scatter Plots and Linear Best-Fit Graphs