Contents

Chapter 1 Linear Systems

1.1 Connect English With Mathematics and Graphing Lines.....1

1.2 The Method of Substitution.....3

1.3 Investigate Equivalent Linear Relations and Equivalent Linear Systems....5

1.4 The Method of Elimination.....7

1.5 Solve Problems Using Linear Systems.....9

Chapter 1 Review.....11

Chapter 2 Analytic Geometry

2.1 Midpoint of a Line Segment.....13

2.2 Length of a Line Segment.....15

2.3 Apply Slope, Midpoint, and Length Formulas.....17

2.4 Equation for a Circle.....19

Chapter 2 Review.....21

Chapter 3 Geometric Properties

3.1 Investigate Properties of Triangles.....23

3.2 Verify Properties of Triangles.....25

3.3 Investigate Properties of Quadrilaterals.....27

3.4 Verify Properties of Quadrilaterals.....29

3.5 Properties of Circles.....31

Chapter 3 Review.....33

Chapter 4 Quadratic Relations

4.1 Investigate Non-Linear Relations.....35

4.2 Quadratic Relations.....37

4.3 Investigate Transformations of Quadratics.....39

4.4 Graph $y = a(x - h)^2 + k$.....41

4.5 Quadratic Relations of the Form $y = a(x - r)(x - s)$.....43

4.6 Negative and Zero Exponents.....45

Chapter 4 Review.....47

Chapter 5 Quadratic Expressions

5.1 Multiply Polynomials....49
5.2 Special Products....51
5.3 Common Factors....53
5.4 Factor Quadratic Expression of the Form $x^2 + bx + c$....55
5.5 Factor Quadratic Expression of the Form $ax^2 + bx + c$....57
5.6 Factor a Perfect Square Trinomial and a Difference of Squares....59
Chapter 5 Review....61

Chapter 6 Quadratic Equations

6.1 Maxima and Minima....63
6.2 Solve Quadratic Equations....65
6.3 Graph Quadratics Using the *x*-Intercepts....67
6.4 The Quadratic Formula....69
6.5 Solve Problems Using Quadratic Equations....71
Chapter 6 Review....73

Chapter 7 Trigonometry of Right Triangles

7.1 Investigate Properties of Similar Triangles....75
7.2 Use Similar Triangles to Solve Problems....77
7.3 The Tangent Ratio....79
7.4 The Sine and Cosine Ratios....81
7.5 Solve Problems Involving Right Triangles....83
Chapter 7 Review....85

Chapter 8 Trigonometry of Acute Triangles

8.1 The Sine Law....87
8.2 The Cosine Law....89
8.3 Find Angles Using the Cosine Law....91
8.4 Solve Problems Using Trigonometry....93
Chapter 8 Review....95

Enrichment Questions.....97

Answers.....107