Contents

THE BASICS

- 1.1 Notations and Symbols 1
- 1.2 Real Numbers 5
- 1.3 Addition of Real Numbers 8
- 1.4 Subtraction of Real Numbers 13
- 1.5 Properties of Real Numbers 16
- 1.6 Multiplication of Real Numbers 21
- 1.7 Division of Real Numbers 24
- Subsets of Real Numbers 27 Summary and Review 29 Test 31

2

LINEAR EQUATIONS AND INEQUALITIES

- Simplifying Expressions 33
- Addition Property of Equality 36
- 2.3 Multiplication Property of Equality 39
- 2.4 Solving Linear Equations 43
- 2.5 Word Problems 46

Xii Contents

2.6 Linear Inequalities 50 Summary and Review 56 Test 57

3

GRAPHING AND LINEAR SYSTEMS

2 }	Calations	4-	T :	T7 41	•	T	37 11	70
- 1	Solutions	ю	Linear	Equations	ın	LWO	Variables	うと

- 3.2 Graphing Ordered Pairs and Straight Lines 65
- 3.3 Solving Linear Systems by Graphing 72
- 3.4 The Elimination Method 79
- 3.5 The Substitution Method 86
- 3.6 Word Problems 91 Summary and Review 97 Test 98

4

EXPONENTS AND POLYNOMIALS

- Multiplication with Exponents 100
- Division with Exponents 104
- Operations with Monomials 109
- Addition and Subtraction of Polynomials 112
- Multiplication with Polynomials 114
- Binomial Squares and Other Special Products 118
- Dividing a Polynomial by a Monomial 121
- Dividing a Polynomial by a Polynomial 123 Summary and Review 128 Test 129

5 Excreping

FACTORING

- Factoring Integers 131
- The Greatest Common Factor 134
- **Factoring Trinomials** 136
- 5.4 More Trinomials to Factor 140
- 5.5 The Difference of Two Squares 143

Contents xiii

5.6	Quadratic Equations	146		
5.7	Word Problems 150			
	Summary and Review	153		

Test 155

6

RATIONAL EXPRESSIONS

- 6.1 Review of Fractions 156
- 6.2 Reducing Rational Expressions to Lowest Terms 162
- 6.3 Multiplication and Division of Rational Expressions 167
- 6.4 Addition and Subtraction of Rational Expressions 170
- 6.5 Equations Involving Rational Expressions 175
- 6.6 Word Problems 180
 Summary and Review 184
 Test 186

7

ROOTS AND RADICALS

- 7.1 Definitions and Common Roots 187
- 7.2 Properties of Radicals 190
- 7.3 Simplified Form for Radicals 196
- 7.4 Addition and Subtraction of Radical Expressions 202
- 7.5 Multiplication and Division of Radicals 205
- 7.6 Equations Involving Radicals 208Summary and Review 212Test 213

8

MORE QUADRATIC EQUATIONS

- 8.1 More Quadratic Equations 215
- 8.2 Completing the Square 218
- 8.3 The Quadratic Formula 223
- 8.4 Complex Numbers 226
- 8.5 Complex Solutions to Quadratic Equations 231

A) Contours

Graphing Quadratic Equations 233 Summary and Review 239 Test 239



IN MORE DETAIL (EXTRA STUFF)

- Slope and y-Intercept 241
- The Point-Slope and Slope-Intercept Form for Straight Lines 247
- Functions and Function Notation 250
- Fractional Exponents 254
- "And" and "Or" 257
- Graphs of Linear Inequalities 260
- Direct Variation 265
- Inverse Variation 268
- Formulas 270
 - Summary and Review 273

Test 274

ANSWERS TO ODD-NUMBERED EXERCISES AND CHAPTER TESTS 275

TABLE OF SQUARES AND SQUARE ROOTS 307

INDEX 309