

# CONTENTS

Translator's Preface / vii

Acknowledgments / ix

## **1 Dividing Natural Numbers / 1**

Review / 2

1.1 Factors and Multiples / 6

1.2 Rules of Divisibility / 9

Independent Assignment I: *Prime and Composite Numbers* / 14

1.3 Prime Numbers / 15

A Little History: *Sieve of Eratosthenes* / 15

Review / 17

1.4 Prime Factors / 18

1.5 Greatest Common Factor / 20

1.6 Least Common Multiple / 23

Review / 27

Check Your Understanding / 28

## **2 Adding and Subtracting Fractions / 31**

2.1 Fractions as Quotients / 32

2.2 The Fundamental Property of Fractions / 35

Review / 38

2.3 Reducing Fractions / 39

2.4 Finding the Least Common Denominator / 42

Review / 45

2.5 Comparing Fractions / 46

Review / 49

2.6 Adding and Subtracting Fractions with Different Denominators / 50

Check Your Understanding / 61

### **3 Fractions, Decimals, and Percents / 65**

Independent Assignment II: *Converting Fractions to Decimals* / 66

- 3.1 Repeating Decimals / 68  
Review / 70
- 3.2 Decimal Approximations of Fractions / 71  
A Little History: *Fractions and Decimals* / 72  
Review / 74
- 3.3 Multiplying Fractions / 75
- 3.4 More Multiplying Fractions / 83  
Review / 89
- 3.5 Finding a Percent of a Number / 90  
Check Your Understanding / 94

### **4 Proportions / 97**

Independent Assignment III: *Reciprocal Numbers* / 98

- 4.1 Dividing Fractions / 100
- 4.2 Practice Dividing Fractions / 105  
Review / 111
- 4.3 Using Percents to Find Numbers / 112
- 4.4 The Quotient of Two Numbers / 116
- 4.5 Percent of Change / 120
- 4.6 Using Fractions and Decimals / 123  
Review / 128
- 4.7 Circles / 129
- 4.8 Circumference / 132
- 4.9 Area of a Circle / 136  
A Little History:  $\pi$  / 137  
Review / 139
- 4.10 Sectors of a Circle / 140

- 4.11 Circle Graphs / 143
- 4.12 Spheres / 145
- 4.13 Proportions / 148
  - Review / 150
- 4.14 The Cross Product Property / 151
- 4.15 Direct Variation/ 155
- 4.16 Scale / 160
  - Review / 163
- 4.17 Inverse Variation/ 165
  - Check Your Understanding / 168

## **5 Positive and Negative Numbers / 173**

- 5.1 Negative Numbers / 174
  - A Little History: *Negative Numbers* / 175
  - Review / 177
- 5.2 The Number Line / 178
- 5.3 Opposite Numbers / 181
- 5.4 Absolute Value / 185
- 5.5 Comparing Numbers / 188
  - Review / 193
- 5.6 Intersecting Lines / 194
- 5.7 Perpendicular Lines / 198
- 5.8 Parallel Lines / 201
  - Review / 204
- 5.9 The Coordinate Plane / 206
  - Independent Assignment IV: *Plotting Points in a Coordinate Plane* / 211
  - Review / 214
- 5.10 Graphing / 216
  - Check Your Understanding / 225

## **6 Operations with Rational Numbers / 231**

- 6.1 Adding Two Negative Numbers / 232
- 6.2 Adding Numbers with Different Signs / 236
  - Review / 241
- 6.3 Properties of Addition: Adding Several Numbers / 243
- 6.4 Subtraction / 247
- 6.5 Expressions Containing Addition and Subtraction / 252
- 6.6 The Distance between Two Points on a Number Line / 256
  - Review / 258
- 6.7 Multiplying Two Numbers / 259
- 6.8 Commutative and Associative Properties of Multiplication / 264
- 6.9 Coefficients / 268
  - Review / 270
- 6.10 The Distributive Property of Multiplication / 271
- 6.11 Combining Like Terms / 275
- 6.12 Division / 279
- 6.13 Solving Equations / 284
- 6.14 Using Equations to Solve Problems / 288
  - Review / 293
- 6.15 Calculators and Rational Numbers / 296
  - Check Your Understanding / 298

## **Selected Answers / 301**

## **Glossary / 303**

## **Subject Index / 307**