

Brief Contents

Chapter 1	Whole Numbers	1
Chapter 2	Integers and Algebraic Expressions	85
Chapter 3	Solving Equations	131
Chapter 4	Fractions and Mixed Numbers	177
Chapter 5	Decimals	279
Chapter 6	Ratio and Proportion	371
Chapter 7	Percents	415
Chapter 8	Measurement and Geometry	479
Chapter 9	Graphs and Statistics	571
Chapter 10	Exponents and Polynomials	639

Contents

Chapter 1

Whole Numbers 1

1.1 Study Tips 2

Group Activity: Becoming a Successful Student 3

1.2 Introduction to Whole Numbers 5

1.3 Addition and Subtraction of Whole Numbers and Perimeter 12

1.4 Rounding and Estimating 28

1.5 Multiplication of Whole Numbers and Area 34

1.6 Division of Whole Numbers 47

Problem Recognition Exercises: Operations on Whole Numbers 57

1.7 Exponents, Algebraic Expressions, and the Order of Operations 58

1.8 Mixed Applications and Computing Mean 66

Chapter 2

Integers and Algebraic Expressions 85

2.1 Integers, Absolute Value, and Opposite 86

2.2 Addition of Integers 92

2.3 Subtraction of Integers 100

2.4 Multiplication and Division of Integers 106

Problem Recognition Exercises: Operations on Integers 114

2.5 Order of Operations and Algebraic Expressions 115

Group Activity: Checking Weather Predictions 122

Chapter 3

Solving Equations 131

3.1 Simplifying Expressions and Combining *Like* Terms 132

3.2 Addition and Subtraction Properties of Equality 140

3.3 Multiplication and Division Properties of Equality 147

3.4 Solving Equations with Multiple Steps 152

Problem Recognition Exercises: Comparing Expressions and Equations 157

3.5 Applications and Problem Solving 158

Group Activity: Constructing Linear Equations 168

Chapter 4

Fractions and Mixed Numbers 177

4.1 Introduction to Fractions and Mixed Numbers 178

4.2 Simplifying Fractions 188

4.3 Multiplication and Division of Fractions 201

4.4 Least Common Multiple and Equivalent Fractions 214

4.5 Addition and Subtraction of Fractions 223

- 4.6** Estimation and Operations on Mixed Numbers 232
Problem Recognition Exercises: Operations on Fractions and Mixed Numbers 247
- 4.7** Order of Operations and Complex Fractions 247
- 4.8** Solving Equations Containing Fractions 254
Problem Recognition Exercises: Comparing Expressions and Equations 261
Group Activity: Card Games with Fractions 262

Chapter 5

Decimals 279

- 5.1** Decimal Notation and Rounding 280
- 5.2** Addition and Subtraction of Decimals 290
- 5.3** Multiplication of Decimals and Applications with Circles 299
- 5.4** Division of Decimals 312
Problem Recognition Exercises: Operations on Decimals 323
- 5.5** Fractions, Decimals, and the Order of Operations 324
- 5.6** Solving Equations Containing Decimals 338
- 5.7** Mean, Median, and Mode 345
Group Activity: Purchasing from a Catalog 355

Chapter 6

Ratio and Proportion 371

- 6.1** Ratios 372
- 6.2** Rates 380
- 6.3** Proportions 387
Problem Recognition Exercises: Operations on Fractions versus Solving Proportions 394
- 6.4** Applications of Proportions and Similar Figures 395
Group Activity: Investigating Probability 404

Chapter 7

Percents 415

- 7.1** Percents, Fractions, and Decimals 416
- 7.2** Percent Proportions and Applications 427
- 7.3** Percent Equations and Applications 436
Problem Recognition Exercises: Percents 445
- 7.4** Applications of Sales Tax, Commission, Discount, Markup, and Percent Increase and Decrease 446
- 7.5** Simple and Compound Interest 458
Group Activity: Tracking Stocks 466

Chapter 8

Measurement and Geometry 479

- 8.1** U.S. Customary Units of Measurement 480
- 8.2** Metric Units of Measurement 490
- 8.3** Converting Between U.S. Customary and Metric Units 502
 - Problem Recognition Exercises:** U.S. Customary and Metric Conversions 510
- 8.4** Medical Applications Involving Measurement 511
- 8.5** Lines and Angles 514
- 8.6** Triangles and the Pythagorean Theorem 523
- 8.7** Perimeter, Circumference, and Area 532
 - Problem Recognition Exercises:** Area, Perimeter, and Circumference 543
- 8.8** Volume and Surface Area 544
 - Group Activity:** Remodeling the Classroom 553

Chapter 9

Graphs and Statistics 571

- 9.1** Rectangular Coordinate System 572
- 9.2** Graphing Two-Variable Equations 579
- 9.3** Tables, Bar Graphs, Pictographs, and Line Graphs 590
- 9.4** Frequency Distributions and Histograms 602
- 9.5** Circle Graphs 608
- 9.6** Introduction to Probability 616
 - Group Activity:** Creating a Statistical Report 623

Chapter 10

Exponents and Polynomials 639

- 10.1** Addition and Subtraction of Polynomials 640
- 10.2** Multiplication Properties of Exponents 649
- 10.3** Multiplication of Polynomials 654
 - Problem Recognition Exercises:** Operations on Polynomials and Exponential Expressions 659
- 10.4** Introduction to Factoring 660
- 10.5** Negative Exponents and the Quotient Rule for Exponents 664
- 10.6** Scientific Notation 670
 - Group Activity:** Evaluating and Interpreting a Polynomial Model 674

Student Answer Appendix SA-1

Credits C-1

Index I-1