Elementary Algebra Harold R Jacobs

TABLE OF CONTENTS

1. FUNDAMENTAL OPERATIONS

- 1. Addition
- 2. Subtraction
- 3. Multiplication
- 4. Division
- 5. Raising to a Power
- 6. Zero and One
- 7. Several Operations
- 8. Parentheses
- 9. The Distributive Rule Summary and Review

2. FUNCTIONS AND GRAPHS

- 1. An Introduction to Functions
- 2. The Coordinate Graph
- 3. More on Functions
- 4. Direct Variation
- 5. Linear Functions
- 6. Inverse Variation Summary and Review

3. THE INTEGERS

- 1. The Integers
- 2. More on the Coordinate Graph
- 3. Addition
- 4. Subtraction
- 5. Multiplication
- 6. Division
- 7. Several Operations Summary and Review

4. THE RATIONAL NUMBERS

- 1. The Rational Numbers
- 2. Absolute Value and Addition
- 3. More on Operations with Rational Numbers
- 4. Approximations
- 5. More on Graphing Functions Summary and Review

5. EQUATIONS IN ONE VARIABLE

- 1. Equations
- 2. Inverse Operations
- 3. Equivalent Equations
- 4. Equivalent Expressions
- 5. More on Solving Equations
- 6. Length and Area
- 7. Distance, Rate, and Time
- 8. Rate Problems Summary and Review

6. EQUATIONS IN TWO VARIABLES

- 1. Equations in Two Variables
- 2. Formulas
- 3. Graphing Linear Equations
- 4. Intercepts
- 5. Slope
- 6. The Slope-Intercept Form Summary and Review

7. SIMULTANEOUS EQUATIONS

- 1. Simultaneous Equations
- 2. Solving by Subtraction
- 3. More on Solving by Addition and Subtraction
- 4. Graphing Simultaneous Equations
- 5. Inconsistent and Equivalent Fractions
- 6. Solving by Substitution
- 7. Mixture Problems Summary and Review

8. EXPONENTS

- 1. Large Numbers
- 2. A Fundamental Property of Exponents
- 3. Two More Properties of Exponents
- 4. Zero and Negative Exponents
- 5. Small Numbers
- 6. Powers of Products and Quotients
- 7. Exponential Functions Summary and Review

MIDTERM REVIEW

9. POLYNOMIALS

- 1. Monomials
- 2. Polynomials
- 3. Adding and Subtracting Polynomials
- 4. Multiplying Polynomials
- 5. More on Multiplying Polynomials
- 6. Squaring Binomials
- 7. Dividing Polynomials Summary and Review

10. FACTORING

- 1. Prime and Composite Numbers
- 2. Monomials and Their Factors
- 3. Polynomials and Their Factors
- 4. Factoring Second-Degree Polynomials
- 5. Factoring the Difference of Two Squares
- 6. Factoring Trinomial Squares
- 7. More on Factoring Second-Degree Polynomials Summary and Review

11. FRACTIONS

- 1. Fractions
- 2. Algebraic Fractions
- 3. Adding and Subtracting Fractions
- 4. More on Addition and Subtraction
- 5. Multiplying Fractions
- 6. More on Multiplication
- 7. Dividing Fractions
- 8. Complex Fractions Summary and Review

12. SQUARE ROOTS

- 1. Squares and Square Roots
- 2. Square Roots of Products
- 3. Square Roots of Quotients
- 4. Adding and Subtracting Square Roots
- 5. Multiplying Square Roots
- 6. Dividing Square Roots
- 7. Radical Equations Summary and Review

13. QUADRATIC EQUATIONS

- 1. Polynomial Equations
- 2. Polynomial Functions
- 3. Solving Polynomial Equations by Graphing
- 4. Solving Quadratic Equations by Factoring
- 5. Solving Quadratic Equations by Taking Square Roots
- 6. Completing the Square
- 7. The Quadratic Formula
- 8. The Discriminant
- 9. Solving Higher-Degree Equations Summary and Review

14. THE REAL NUMBERS

- 1. Rational Numbers
- 2. Irrational Numbers
- 3. More Irrational Numbers
- 4. Pi (π)
- 5. The Real Numbers Summary and Review

15. FRACTIONAL EQUATIONS

- 1. Ratio and Proportion
- 2. Equations Containing Fractions
- 3. More on Fractional Equations
- 4. Absolute Value and Inequalities Summary and Review

16. INEQUALITIES

- 1. Inequalities
- 2. Solving Linear Inequalities
- 3. More on Solving Inequalities
- 4. Absolute Value and Inequalities Summary and Review

17. NUMBER SEQUENCES

- 1. Number Sequences
- 2. Arithmetic Sequences
- 3. Geometric Sequences
- 4. Infinite Geometric Sequences Summary and Review

FINAL REVIEW

Answers to the Set II Exercises Index