

Aufmann, Intermediate Algebra with Applications, TOC

1. REVIEW OF REAL NUMBERS.

Introduction to Real Numbers. Operations on Integers. Operations on Rational Numbers. Variable Expressions. Verbal Expressions and Variable Expressions.

2. FIRST-DEGREE EQUATIONS AND INEQUALITIES.

Equations in One Variable. Value Mixture and Motion Problems. Applications: Problems Involving Percent. Inequalities in One Variable. Absolute Value Equations and Inequalities.

3. LINEAR FUNCTIONS AND INEQUALITIES IN TWO VARIABLES.

The Rectangular Coordinate System. Introduction to Functions. Linear Functions. Slope of a Straight Line. Finding Equations of Lines. Parallel and Perpendicular Lines. Inequalities in Two Variables.

4. SYSTEMS OF EQUATIONS AND INEQUALITIES.

Solving Systems of Linear Equations by Graphing and by the Substitution Method. Solving Systems of Linear Equations by the Addition Method. Solving Systems of Equations by Using Determinants and by Using Matrices. Application Problems. Solving Systems of Linear Inequalities.

5. POLYNOMIALS AND EXPONENTS.

Exponential Expressions. Introduction to Polynomials. Multiplication of Polynomials. Division of Polynomials. Introduction to Factoring. Factoring Trinomials. Special Factoring. Solving Equations by Factoring.

6. RATIONAL EXPRESSIONS.

Introduction to Rational Functions. Operations on Rational Expressions. Complex Fractions. Rational Equations. Proportions and Variation. Literal Equations.

7. RATIONAL EXPONENTS AND RADICALS.

Rational Exponents and Radical Expressions. Operations on Radical Expressions. Radical Functions. Solving Equations Containing Radical Expressions. Complex Numbers.

8. QUADRATIC EQUATIONS AND INEQUALITIES.

Solving Quadratic Equations by Factoring or by Taking Square Roots. Solving Quadratic Equations by Completing the Square and by Using the Quadratic Formula. Equations That Are Reducible to Quadratic Equations. Applications of Quadratic Equations. Properties of Quadratic Functions. Applications of Quadratic Functions. Nonlinear Inequalities.

9. FUNCTIONS AND RELATIONS.

Translations of Graphs. Algebra of Functions. One-to-One and Inverse Functions.

10. EXPONENTIAL AND LOGARITHMIC FUNCTIONS.

Exponential Functions. Introduction to Logarithms. Graphs of Logarithmic Functions. Exponential and Logarithmic Equations. Applications of Exponential and Logarithmic Functions.

11. SEQUENCES AND SERIES.

Introduction to Sequences and Series. Arithmetic Sequences and Series. Geometric Sequences and Series. Binomial Expansions.

12. CONIC SECTIONS.

The Parabola. The Circle. The Ellipse and the Hyperbola. Solving Nonlinear Systems of Equations. Quadratic Inequalities and Systems of Inequalities.

Final Exam.
Appendix.