

## **McKeague, Elementary and Intermediate Algebra, 4th Edition, TOC**

### **1. THE BASICS.**

Notation and Symbols. Real Numbers. Addition of Real Numbers. Subtraction of Real Numbers. Properties of Real Numbers. Multiplication of Real Numbers. Division of Real Numbers. Subsets of Real Numbers. Addition and Subtraction with Fractions.

### **2. LINEAR EQUATIONS AND INEQUALITIES.**

Simplifying Expressions. Addition Property of Equality. Multiplication Property of Equality. Solving Linear Equations. Formulas. Applications. More Applications.

Linear Inequalities.

### **3. GRAPHING AND SYSTEMS OF EQUATIONS.**

Paired Data and Graphing Ordered Pairs. Solutions to Linear Equations in Two Variables. Graphing Linear Equations in Two Variables. More on Graphing: Intercepts.

Slope and the Equation of a Line. Graphing Linear Inequalities in two Variables. Solving Linear Systems by Graphing. The Elimination Method. The Substitution Method.

### **4. EXPONENTS AND POLYNOMIALS.**

Multiplication with Exponents. Division with Exponents. Operations with Monomials.

Addition and Subtraction of Polynomials. Multiplication with Polynomials. Binomial Squares and Other Special Products. Dividing a Polynomial by a Monomial. Dividing a Polynomial by a Polynomial.

### **5. FACTORING.**

The Greatest Common Factor and Factoring by Grouping. Factoring Trinomials. More Trinomials to Factor. The Difference of Two Squares. The Sum and Difference of Two Squares. Factoring: A General Review. Solving Equations by Factoring. Applications.

### **6. RATIONAL EXPRESSIONS.**

Reducing Rational Expressions to Lowest Terms. Multiplication and Division of Rational Expressions. Addition and Subtraction of Rational Expressions. Equations Involving Rational Expressions. Applications. Complex Fractions. Proportions.

### **7. TRANSITIONS.**

Review of Solving Equations. Equations with Absolute Value. Compound Inequalities and Interval Notation. Inequalities Involving Absolute Value. Review of Systems of Equations in Two Variables. Systems of Equations in Three Variables. Systems of Linear Inequalities.

### **8. EQUATIONS AND FUNCTIONS.**

The Slope of a Line. The Equation of a Line. Introduction to Functions. Function Notation. Algebra and Composition with Functions. Variation.

### **9. RATIONAL EXPONENTS AND ROOTS.**

Rational Exponents. More Expressions Involving Rational Exponents. Simplified Form for Radicals. Addition and Subtraction of Radical Expressions. Multiplication and Division of Radical Expressions. Equations with Radicals. Complex Numbers.

### **10. QUADRATIC FUNCTIONS.**

Completing the Square. The Quadratic Formula. Additional Items Involving Solutions to Equations. Equations Quadratic in Form. Graphing Parabolas. Quadratic Inequalities.

### **11. EXPONENTIAL AND LOGARITHMIC FUNCTIONS.**

Exponential Functions. The Inverse of a Function. Logarithms are Exponents. Properties of Logarithms. Common Logarithms and Natural Logarithms. Exponential Equations and Change of Base.

12. CONIC SECTIONS.

The Circle. Ellipses and Hyperbolas. Second-Degree Inequalities and Nonlinear Systems.

13. SEQUENCES AND SERIES.

Sequences. Series. Arithmetic Sequences. Geometric Sequences. The Binomial Expansion.