

## **McKeague, Intermediate Algebra, 9th Edition, TOC**

### **1. BASIC PROPERTIES AND DEFINITIONS.**

Fundamental Definitions and Notation. Sets. The Real Numbers. Simple and Compound Inequalities. Properties of Real Numbers. Arithmetic with Real Numbers. Recognizing Patterns.

### **2. EQUATIONS AND INEQUALITIES IN ONE VARIABLE.**

Linear Equations in One Variable. Formulas. Applications. Linear Inequalities in One Variable. Equations with Absolute Value. Inequalities Involving Absolute Value.

### **3. EQUATIONS AND INEQUALITIES IN TWO VARIABLES.**

Paired Data and the Rectangular Coordinate System. The Slope of a Line. The Equation of a Line. Linear Inequalities in Two Variables. Introduction to Functions. Function Notation. Algebra and Composition with Functions. Variation.

### **4. SYSTEMS OF LINEAR EQUATIONS AND INEQUALITIES.**

Systems of Linear Equations in Two Variables. Systems of Linear Equations in Three Variables. Applications of Linear Systems. Matrix Solutions to Linear Systems. Systems of Linear Inequalities.

### **5. EXPONENTS AND POLYNOMIALS.**

Properties of Exponents. Polynomials, Sums, and Differences. Multiplication of Polynomials. The Greatest Common Factor and Factoring by Grouping. Factoring Trinomials. Special Factoring. Factoring: A General Review. Solving Equations by Factoring.

### **6. RATIONAL EXPRESSIONS AND RATIONAL FUNCTIONS.**

Basic Properties and Reducing to Lower Terms. Division of Polynomials and Difference Quotients. Multiplication and Division of Rational Expressions. Addition and Subtraction of Rational Expressions. Complex Fractions. Equations and Graphs with Rational Functions. Applications.

### **7. 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.

### **8. QUADRATIC FUNCTIONS.**

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

### **9. 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.

### **10. CONIC SECTIONS.**

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

### **11. SEQUENCE AND SERIES.**

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

Appendix.

A. Resources.

B. Introduction to Determinants.

C. Cramer's Rule.

D. Synthetic Division.