

PENN STATE UNIVERSITY
MATH 4: INTERMEDIATE ALGEBRA

Text: Elementary Algebra, 4th edition, 2005

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Course Outline

Chapter 1 THE REAL NUMBER SYSTEM

- 1.1 Real Numbers: Order and Absolute Value
- 1.2 Adding and Subtracting Integers
- 1.3 Multiplying and Dividing Integers
- 1.4 Operations with Rational Numbers
- 1.5 Exponents, Order of Operations and Properties of Real Numbers

Chapter 2 FUNDAMENTALS OF ALGEBRA

- 2.1 Writing and Evaluating Algebraic Expressions
- 2.2 Simplifying Algebraic Expressions
- 2.3 Algebra and Problem Solving
- 2.4 Introduction to Equations

Chapter 3 LINEAR EQUATIONS AND PROBLEM SOLVING

- 3.1 Solving Linear Equations
- 3.2 Equations That Reduce to Linear Form
- 3.3 Problem Solving with Percents
- 3.4 Ratios and Proportions **
- 3.5 Geometric and Scientific Applications
- 3.6 Linear Inequalities

Chapter 4 EQUATIONS AND INEQUALITIES IN TWO VARIABLES

- 4.1 Ordered Pairs and Graphs
- 4.2 Graphs of Equations in Two Variables
- 4.3 Slope and Graphs of Linear Equations
- 4.4 Equations of Lines
- 4.5 Graphs of Linear Inequalities **

Chapter 5 EXPONENTS AND POLYNOMIALS

- 5.1 Negative Exponents and Scientific Notation
- 5.2 Adding and Subtracting Polynomials
- 5.3 Multiplying Polynomials: Special Products
- 5.4 Dividing Polynomials

Chapter 6 FACTORING AND SOLVING EQUATIONS

- 6.1 Factoring Polynomials with Common Factors
- 6.2 Factoring Trinomials
- 6.3 More About Factoring Trinomials
- 6.4 Factoring Polynomials with Special Forms
- 6.5 Solving Quadratic Equations by Factoring

NOTES:

1. INSTRUCTORS OF COURSES THAT HAVE MULTIPLE SECTIONS MUST CONSULT WITH EACH OTHER TO DESIGN FINAL EXAMS THAT TEST THE SAME TOPICS.
2. Calculators that perform symbolic manipulations (TI-92, etc.) are not permitted for exams and/or quizzes.
3. If you cover the material in Chapter 1, do so quickly.
4. Discuss Scientific Notation in Section 5.1 as it applies to the calculator.