

## MAT 71 Pre-Algebra Refresher Course Outline

### Unit 1

- 1.1 Place Value, Rounding, and Comparing Whole Numbers
  - 1.1.1 Place Value and Names for Whole Numbers
  - 1.1.2 Rounding Whole Numbers
  - 1.1.3 Comparing Whole Numbers
- Adding and Subtracting Whole Numbers
  - 1.2.1 Adding Whole Numbers and Applications
  - 1.2.2 Subtracting Whole Numbers and Applications
  - 1.2.3 Estimation
- Multiplying Whole Numbers and Area
  - 1.3.1 Multiplying Whole Numbers and Applications
  - 1.3.2 Areas of Rectangles
- 1.4 Dividing Whole Numbers and Applications
- 1.5 Exponents, Roots, and Order of Operations
  - 1.5.1 Understanding Exponents and Square Roots
  - 1.5.2 Order of Operations
- 1.6 Basic Statistics
  - 1.6.1 Graphing Data
  - 1.6.2 Measures of Center
- 1.7 Areas and Perimeters of Quadrilaterals
- 1.8 Properties of Numbers
  - 1.8.1 Properties and Laws of Whole Numbers
  - 1.8.2 The Distributive Property

### Unit 2

- 2.1 Intro to Fractions
  - 2.1.1 Introduction to Fractions and Mixed Numbers
  - 2.1.2 Proper and Improper Fractions
- 2.2 Simplifying Fractions
  - 2.2.1 Factors and Primes
  - 2.2.2 Simplifying Fractions
  - 2.2.3 Comparing Fractions
- 2.3 Multiplying Fractions and Mixed Numbers
- 2.4 Dividing Fractions and Mixed Numbers
- 2.5 Adding and Subtracting Fractions and Mixed Numbers with Like Denominators
- 2.6 Adding and Subtracting Fractions and Mixed Numbers with Unlike Denominators

### Unit 3

- 3.1 Intro to Decimals
  - 3.1.1 Decimals and Fractions
  - 3.1.2 Ordering and Rounding Decimals
- 3.2 Adding and Subtracting Decimals
- 3.3 Multiplying and Dividing Decimals
  - 3.3.1 Multiplying Decimals
  - 3.3.2 Dividing Decimals

- 3.3.3 Estimation with Decimals
- 3.4 Intro to Percents
  - 3.4.1 Convert Percents, Decimals, and Fractions
  - 3.4.2 Finding a Percent of a Whole
- 3.5 Solving Percent Problems
- 3.6 Percent Applications
  - 3.6.1 Solving Percent Applications
  - 3.6.2 Circle Graphs (Pie Charts)

#### Unit 4

- 4.1 Ratios and Rates
- 4.2 Proportions
- 4.3 Volumes of Solids
- 4.4 U.S. Measurement
  - 4.4.1 U.S. Measurement - Length
  - 4.4.2 U.S. Measurement - Weight
  - 4.4.3 U.S. Measurement - Capacity
- 4.5 Metric Measurement
  - 4.5.1 The Metric System
  - 4.5.2 Using Metric Conversions to Solve Problems
- 4.6 Temperature Scales

#### Unit 5

- 5.1 Integers and Real Numbers
  - 5.1.1 Integers
  - 5.1.2 Rational and Real Numbers
- 5.2 Adding and Subtracting Integers and Real Numbers
  - 5.2.1 Adding Integers
  - 5.2.2 Adding Real Numbers
  - 5.2.3 Subtracting Real Numbers
- 5.3 Multiplying and Dividing Real Numbers
- 5.4 Order of Operations with Real Numbers
- 5.5 Intro to Variables
  - 5.5.1 Variables and Expressions
  - 5.5.2 Associative, Commutative, and Distributive Properties

Section 1.6: Solving Equations by Addition and Subtraction

Section 1.7: Solving Equations by Multiplication and Division

Section 2.6 Solving Equations Involving Integers