

MTH 060 Course Objectives

1. Properties of Real Numbers

- 1.1 Use the Commutative, Associative, Distributive, Identity, and Inverse Properties.

2. Operations on Real Numbers

- 2.1 Review arithmetic operations on rational numbers.
- 2.2 Use the concept of absolute value as distance from zero on the real number line to determine the absolute value of real numbers.
- 2.3 Evaluate a given expression by applying the correct priority of operations.
- 2.4 Convert fraction to decimal to percent (and vice versa).
- 2.5 Review rounding rules in general.
- 2.6 Simplify exponential expressions with whole number exponents and real number bases.
- 2.7 Find the decimal approximations of square roots using a calculator and appropriate rounding rules.
- 2.8 Compute a sum represented by summation notation.
- 2.9 Determine ratios based on the context of a word problem.

3. Equation Solving Techniques

- 3.1 Solve first degree equations in one variable.
- 3.2 Solve applications involving linear equations.
- 3.3 Solve proportions by using cross-multiplication.
- 3.4 Solve literal equations and formulas for a single variable.

4. Inequalities

- 4.1 Review inequality terms and symbols (such as less than, greater than, at least, at most, no more than, no less than, etc.).
- 4.2 Make comparisons between two real numbers.
- 4.3 Use interval notation to represent an inequality.

5. Functions

- 5.1 Determine whether a correspondence is a function.
- 5.2 Given a function described by an equation, find function outputs of specified inputs.
- 5.3 Given the equation or graph of a linear model with x and y , predict or estimate the value of y for a given value of x .
- 5.4 Determine the domain and range of a given function.
- 5.5 Manipulate and evaluate statistics formulas, particularly those involving sigma, z , $\bar{x}$ and μ .

6. Introduction to Set Theory

- 6.1 Find the union, intersection, and complement of sets.
- 6.2 Evaluate factorials and combinations.

7. The Cartesian Coordinate System

- 7.1 Review/use the Cartesian coordinate system to describe the x- and y-axes, the origin and quadrants, and determine the positions of ordered pairs.
- 7.2 Graph linear equations in two variables by plotting points.
- 7.3 Determine the x- and y-intercepts and use them to graph a linear equation.
- 7.4 Use the slope formula to determine the slope of the line through two given points.
- 7.5 Explain the concept of slope as a rate of change.
- 7.6 Determine the slopes of horizontal and vertical lines.
- 7.7 Graph linear equations in two variables by the slope-intercept method.
- 7.8 Write the equation of a line in slope-intercept form and in point-slope form:
 - a. Given the slope and the y-intercept.
 - b. Given a graph with integer x- and y-intercepts.
 - c. Given the slope and a point on the line.
 - d. Given two points on the line.