

MT065 Elementary Algebra with Measurement

Course Outline

- I. Measurement
 - A. Convert measurements of length, weight, and capacity within the U.S. Customary System.
 - B. Convert measurements of length, weight, and capacity within the International System of units (metric).
 - C. Convert U.S. Customary units to metric units.
 - D. Convert metric units to U.S. Customary units.

- II. Algebraic Expressions
 - A. Simplify expressions using properties of exponents.
 - B. Evaluate variable expressions.
 - C. Simplify variable expressions using the property of real numbers and the order of operations.
 - D. Translate verbal expressions into variable expressions.

- III. Different Notations
 - A. Perform arithmetic operations with powers of 10.
 - B. Write numbers in scientific and engineering notation.
 - C. Multiply and divide numbers in scientific and engineering notation.
 - D. Add, subtract, multiply, and divide numbers with measurements of units.

- IV. Roots
 - A. Simplify square roots.
 - B. Evaluate square roots.
 - C. Simplify and evaluate cube roots.
 - D. Calculate the third side of a right triangle using the Pythagorean Theorem.

- VI. Equations
 - A. Solve linear equations in one variable.
 - B. Translate verbal problems into equations and solve.
 - C. Solve literal equations with variables of power 1.
 - D. Solve application problems using direct variation.
 - E. Solve application problems using inverse variation.
 - F. Solve applications of linear equations.

- VII. Linear Inequalities
 - A. Solve linear inequalities in one variable.
 - B. Graph solutions.

- VIII. Graphing
 - A. Plot points in the plane.
 - B. Graph linear equations using the slope and y-intercept.
 - C. Find solutions to linear equations in two variables
 - D. Sketch lines by plotting points
 - E. Find intercepts and graph using intercepts
 - F. Find slope given a graph or two points
 - G. Graphing of real world data and applications of graphing linear equations.

- IX. Polynomials and Exponents
 - A. Define and use properties of integral exponents.
 - B. Add, subtract, and multiply polynomials.
 - C. Divide a polynomial by a monomial.

- X. Factoring
 - A. Factor the greatest common factor from a polynomial,.
 - B. Factor four term polynomials by grouping
 - C. Factor a simple trinomial of the form $x^2 + bx + c$.
 - D. Factor trinomials of the form $ax^2 + bx + c$, $a \neq 1$
 - E. Factor difference of two squares
 - F. Factor completely
 - G. Solve equations by factoring
 - 1. Define quadratic equation
 - 2. Solve quadratic equations