

Course Objectives/Course Outline
Spokane Community College

Course Title: Elementary Algebra I

Prefix and Course Number: MATH 91

Course Learning Outcomes:

By the end of this course, a student should be able to:

- Perform order of operations with fractions, decimals, and signed numbers.
- Simplify polynomials using the distributive property and combining like terms.
- Add, subtract, and multiply polynomials.
- Evaluate variable expressions.
- Perform Unit Conversions.
- Find the perimeter, area, volume and surface area of geometric figures.
- Solve linear equations using the addition and multiplication properties of equality.
- Solve literal equations for a specified variable.
- Solve and graph linear inequalities.
- Solve application problems that lead to linear equations.
- Apply properties of exponents to simplify expressions involving integer exponents.
- Use and convert numbers to and from Scientific Notation.
- Identify parts of the Cartesian Coordinate System.
- Graph lines by finding any 2 points, finding intercepts or finding slope and a point.
- Find the slope of a line give 2 points, the equation or graph.
- Find the equation of a line given 2 points, a point and slope, or conditions and a point.
- Recognize and use slope intercept form.
- Put a linear equation into slope intercept form.
- Graph 2-variable linear inequalities.
- Write ratios, rates and proportions.
- Solve problems using proportions.
- Convert between fractions, decimals and percents.
- Solve percent problems using proportions or the percent equation.

Course Outline:

- I. Pre-Algebra Review
 - A. Fractions
 - B. Decimals
 - C. Percents
 - D. Integers [& Operations]
 - E. Positive Exponents
 - F. Order of Operations
 - G. Variables
 - i. Expressions & Polynomials
 - ii. Evaluate
 - iii. Combine Like Terms
 - H. Unit Conversions
- II. Geometry Review
 - A. Figures & Properties
 - B. Perimeters

- C. Areas
- D. Volumes
- E. Surface Areas
- F. Ratios (including similar figures)
- III. Single Variable (Linear Focus)
 - A. Revisit Polynomials
 - B. Solve Linear Equations
 - i. Addition Property of Equality
 - ii. Multiplication Property of Equality
 - iii. Combination problems
 - C. Literal Equations
 - D. Linear Inequalities
 - E. Applications
 - i. Integer problems
 - ii. Distance, rate, time problems
 - iii. Mixture problems
 - iv. Percent problems
- IV. Multiplication Focus
 - A. Integer Exponents [Definitions & Rules]
 - i. Product Rule
 - ii. Power-to-a-Power Rule
 - iii. Quotient Rule
 - iv. Power of a Product Rule
 - v. Power of a Quotient Rule
 - B. Combination of Exponent Rules
 - C. Scientific Notation
 - D. Monomial Products
 - E. Distributive Property of Multiplication over Addition
 - F. Special Products
 - i. FOIL
 - ii. Conjugate Products
 - iii. Square of a binomial
 - iv. Cube of a binomial
- V. Two Variables (Linear Focus)
 - A. Cartesian Plane
 - B. Graphing Lines
 - C. Intercepts
 - D. Slope
 - i. Finding slope
 - a. From two points
 - b. From an equation
 - ii. Graphing with slope
 - iii. Parallel Lines
 - iv. Perpendicular Lines
 - E. Linear Equations
 - i. Slope-Intercept
 - ii. Finding Equations
 - a. Given two points
 - b. Given a point and a slope
 - F. Linear Inequalities