

Algebra I: High School

MODULE 1—Operations and Linear Equations & Inequalities

A. ASSESSMENT ANCHOR: Operations with Real Numbers and Expressions A1.1.1

1. Anchor Descriptor: Represent and/or use numbers in equivalent forms (e.g., integers, fractions, decimals, percents, square roots, and exponents). A1.1.1.1
 - a. Compare and/or order any real numbers. Note: Rational and irrational may be mixed. A1.1.1.1.1
 - b. Simplify square roots (e.g., $\sqrt{24} = 2\sqrt{6}$). A1.1.1.1.2
2. Anchor Descriptor: Apply number theory concepts to show relationships between real numbers in problemsolving settings. A1.1.1.2
 - a. Find the Greatest Common Factor (GCF) and/or the Least Common Multiple (LCM) for sets of monomials. A1.1.1.2.1
3. Anchor Descriptor: Use exponents, roots, and/or absolute values to solve problems. A1.1.1.3
 - a. Simplify/evaluate expressions involving properties/laws of exponents, roots, and/or absolute values to solve problems. Note: Exponents should be integers from -10 to 10 . A1.1.1.3.1
4. Anchor Descriptor: Use estimation strategies in problem-solving situations A1.1.1.4
 - a. Use estimation to solve problems. A1.1.1.4.1
5. Anchor Descriptor: Simplify expressions involving polynomials. A1.1.1.5
 - a. Add, subtract, and/or multiply polynomial expressions (express answers in simplest form). Note: Nothing larger than a binomial multiplied by a trinomial. A1.1.1.5.1
 - b. Factor algebraic expressions, including difference of squares and trinomials. Note: Trinomials are limited to the form $ax^2 + bx + c$ where a is equal to 1 after factoring out all monomial factors. A1.1.1.5.2
 - c. Simplify/reduce a rational algebraic expression. A1.1.1.5.3

B. ASSESSMENT ANCHOR: Linear Equations A1.1.2

1. Anchor Descriptor: Write, solve, and/or graph linear equations using various methods. **A1.1.2.1**
 - a. Write, solve, and/or apply a linear equation (including problem situations). **A1.1.2.1.1**
 - b. Use and/or identify an algebraic property to justify any step in an equation-solving process. Note: Linear equations only **A1.1.2.1.2**
 - c. Interpret solutions to problems in the context of the problem situation. Note: Linear equations only. **A1.1.2.1.3**
 2. Anchor Descriptor: Write, solve, and/or graph systems of linear equations using various methods. **A1.1.2.2**
 - a. Write and/or solve a system of linear equations (including problem situations) using graphing, substitution, and/or elimination. Note: Limit systems to two linear equations. **A1.1.2.2.1**
 - b. Interpret solutions to problems in the context of the problem situation. Note: Limit systems to two linear equations. **A1.1.2.2.2**
-

C. ASSESSMENT ANCHOR: Linear Inequalities **A1.1.3**

1. Anchor Descriptor: Write, solve, and/or graph linear inequalities using various methods. **A1.1.3.1**
 - a. Write or solve compound inequalities and/or graph their solution sets on a number line (may include absolute value inequalities). **A1.1.3.1.1**
 - b. Identify or graph the solution set to a linear inequality on a number line. **A1.1.3.1.2**
 - c. Interpret solutions to problems in the context of the problem situation. Note: Linear inequalities only **A1.1.3.1.3**
 2. Anchor Descriptor: Write, solve, and/or graph systems of linear inequalities using various methods. **A1.1.3.2**
 - a. Write and/or solve a system of linear inequalities using graphing. Note: Limit systems to two linear inequalities. **A1.1.3.2.1**
 - b. Interpret solutions to problems in the context of the problem situation. Note: Limit systems to two linear inequalities. **A1.1.3.2.2**
-

D. ASSESSMENT ANCHOR: Functions **A1.2.1**

1. Anchor Descriptor: Analyze and/or use patterns or relations. **A1.2.1.1**
 - a. Analyze a set of data for the existence of a pattern and represent the pattern algebraically and/or graphically. **A1.2.1.1.1**
 - b. Determine whether a relation is a function, given a set of points or a graph. **A1.2.1.1.2**
 - c. Identify the domain or range of a relation (may be presented as ordered pairs, a graph, or a table). **A1.2.1.1.3**

2. Anchor Descriptor: Interpret and/or use linear functions and their equations, graphs, or tables. A1.2.1.2
 - a. Create, interpret, and/or use the equation, graph, or table of a linear function. A1.2.1.2.1
 - b. Translate from one representation of a linear function to another (i.e., graph, table, and equation). A1.2.1.2.2
-

E. ASSESSMENT ANCHOR: Coordinate Geometry A1.2.2

1. Anchor Descriptor: Describe, compute, and/or use the rate of change (slope) of a line. A1.2.2.1
 - a. Identify, describe, and/or use constant rates of change. A1.2.2.1.1
 - b. Apply the concept of linear rate of change (slope) to solve problems. A1.2.2.1.2
 - c. Write or identify a linear equation when given • the graph of the line, • two points on the line, or • the slope and a point on the line. Note: Linear equation may be in point-slope, standard, and/or slope-intercept form. A1.2.2.1.3
 - d. Determine the slope and/or y-intercept represented by a linear equation or graph. A1.2.2.1.4
 2. Anchor Descriptor: Analyze and/or interpret data on a scatter plot. A1.2.2.2
 - a. Draw, identify, find, and/or write an equation for a line of best fit for a scatter plot. A1.2.2.2.1
-

F. ASSESSMENT ANCHOR: Data Analysis A1.2.3

1. Anchor Descriptor: Use measures of dispersion to describe a set of data. A1.2.3.1
 - a. Calculate and/or interpret the range, quartiles, and interquartile range of data. A1.2.3.1.1
2. Anchor Descriptor: Use data displays in problemsolving settings and/or to make predictions. A1.2.3.2
 - a. Estimate or calculate to make predictions based on a circle, line, bar graph, measure of central tendency, or other representation. A1.2.3.2.1
 - b. Analyze data, make predictions, and/or answer questions based on displayed data (box-and-whisker plots, stem-and-leaf plots, scatter plots, measures of central tendency, or other representations). A1.2.3.2.2
 - c. Make predictions using the equations or graphs of best-fit lines of scatter plots. A1.2.3.2.3
3. Anchor Descriptor: Apply probability to practical situations. A1.2.3.3
 - a. Find probabilities for compound events (e.g., find probability of red and blue, find probability of red or blue) and represent as a fraction, decimal, or percent. A1.2.3.3.1