

High School Learning Targets

Algebra I

1. Create and solve equations.

- a) I can solve one-step equations.
- b) I can solve multi-step equations.
- c) I can solve multi-step equations which involve combining like terms.
- d) I can solve multi-step equations using the distributive property.
- e) I can translate verbal expressions.
- f) I can use equations to model and solve real world problem situations.
- g) I can solve a formula for a specified variable.
- h) I can solve absolute value equations.
- i) I can evaluate expressions with and without grouping symbols.

2. Apply concepts related to functions.

- a) I can label and identify parts of the coordinate plane (including quadrants).
- b) I can identify the domain and range of a relation.
- c) I can determine if a relation is a function.
- d) I evaluate a function using functional notation. [e.g., $f(x)$]
- e) I can write a function rule from a table.
- f) I can sketch a graph to represent a verbal description.
- g) I can use functions to model real world problem situations.
- h) I can identify the appropriate domain for a given situation.

3. Create, graph, and interpret linear equations.

- a) I can verify the graph of a line is the set of all its solutions plotted in the coordinate plane.
- b) I can graph a line given a table of values.

- c) I can identify linear equations.
- d) I can identify key features of graphs and tables. (e.g., x-and y-intercepts, end behavior, increasing/decreasing, and slope).
- e) I can find the x- and y-intercepts of a given equation.
- f) I can graph a linear equation using the x- and y-intercepts.
- g) I can graph a linear equation using slope-intercept form (including from standard form).
- h) I can graph vertical and horizontal lines.
- i) I can create a linear equation given a graph.
- j) I can translate between different representations of relations. (e.g., graphs, equations, tables, verbal descriptions, and ordered pairs)
- k) I can calculate and interpret the average rate of change when given two points.
- l) I can determine the equation of a line in point-slope form given two points.
- m) I can determine the equation of a line in slope-intercept form given two points.
- n) I can determine the equation of a line in standard form given two points.
- o) I can write the equation of horizontal and vertical lines.
- p) I can solve a system of equations by graphing with and without technology.
- q) I can solve a system of equations by substitution.
- r) I can solve a system of equations by elimination.
- s) I can represent and solve a real world situation with a system of equations.

4. Create, graph and interpret inequalities in one and two variables.

- a) I can graph linear inequalities in one variable.
- b) I can solve one-step linear inequalities in one variable.
- c) I can solve multi-step linear inequalities in one variable.
- d) I can create inequalities and use them to solve real world situations.
- e) I can solve and graph compound inequalities in one variable.
- f) I can graph a linear inequality in two variables (including from standard form).
- g) I can create linear inequalities to solve real world situations.
- h) I can represent constraints by inequalities and interpret solutions as appropriate and or

- i) non-appropriate options.
- j) I can graph systems of linear inequalities.
- k) I can represent and solve real world situations with systems of equations.

5. Construct and compare linear and exponential models and solve problems.

- a) I can identify and interpret parts of an exponential function (e.g. starting amount, growth or decay, rate of change).
- b) I can create and solve real world situations with exponential functions.
- c) I can interpret the key features of graphs and tables representing exponentials functions
- d) (e.g., end behavior, increasing/decreasing, domain/range).
- e) I can graph exponential functions.
- f) I can distinguish between situations that can be modeled with linear functions and with exponential functions.
- g) I can observe and compare the growth patterns of linear and exponential functions.
- h) I can identify arithmetic sequences and patterns in a set of data.
- i) I can identify geometric sequences and patterns in a set of data.

6. Apply arithmetic operations to polynomials and radicals.

- a) I can classify polynomials by the number of terms and the degree.
- b) I can interpret parts of an expression such as terms, factors, and coefficients.
- c) I can multiply monomials.
- d) I can divide monomials.
- e) I can apply the properties of exponents (including zero and negative exponents) to evaluate and simplify expressions.
- f) I can add and subtract polynomials.
- g) I can multiply polynomials.
- h) I can evaluate and simplify radicals.
- i) I can add and subtract radicals.
- j) I can multiply radicals with and without variables.
- k) I can multiply radicals using the distributive property.

l) I can simplify a fraction by rationalizing the denominator, including an irrational monomial denominator.

7. Create, graph, and solve quadratic equations.

- a) I can factor using the greatest common factor method.
- b) I can factor using the grouping method.
- c) I can factor trinomials in standard form.
- d) I can factor using the difference of squares method.
- e) I can factor perfect square trinomials.
- f) I can solve quadratic equations in standard form by factoring.
- g) I can solve quadratic equations not in standard form by factoring.
- h) I can solve quadratic equations using the quadratic formula.
- i) I can solve quadratic equations by taking the square roots.
- j) I can solve quadratic equations by completing the square.
- k) I can determine and apply the most appropriate method to use to solve a quadratic equation.
- l) I can identify key features of quadratics graphs and tables. (e.g., x-and y-intercepts, end behavior, increasing/decreasing, relative max/min, domain/range and axis of symmetry).
- m) I can find the x- and y-intercepts of a given quadratic equation.
- n) I can graph a quadratic equation from standard form.
- o) I can relate factors, solutions (roots), x-intercepts, and zeros of related quadratic functions.
- p) I can determine a quadratic equation when given its graph or roots.
- q) I can use quadratic functions to represent and solve real world problem situations.

8. Apply arithmetic operations to rational expressions.

- a) I can evaluate and simplify rational expressions.
- b) I can identify excluded values for the domain of rational expressions.
- c) I can multiply rational expressions.
- d) I can divide rational expressions.
- e) I can add and subtract rational expressions with like denominators.

f) I can add and subtract rational expressions with unlike denominators.

9. Explore and analyze graphs of nonlinear equations.

a) I can graph a quadratic equation from vertex form.

b) I can complete the square in a quadratic expression to reveal the max or min.

c) I can graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions.

d) I can investigate transformations of linear, exponential, quadratic, and absolute value

e) functions (e.g. horizontal/vertical shifts and the width of the graph).

f) I can solve a simple system consisting of a linear equation and a quadratic equation in two variables algebraically and graphically.

g) I can interpret and rewrite expressions involving radicals and rational exponents using the properties of exponents.

h) I can define and explain basic properties of rational numbers (e.g. why the sum or product of two rational numbers is rational; that the sum of a rational number and an irrational number is irrational; and that the product of a nonzero rational number and an irrational number is irrational).

10. Compare various methods of data recording to make inferences, predictions, and to estimate probabilities.

a) I can interpret data from line, bar, and circle graphs, histograms, scatterplots, box-and-whisker plots, stem-and-leaf plots, and frequency tables to draw inferences and make predictions.

b) I can represent data using dot plots, histograms, and box plots.

c) I can represent data on a scatterplot and interpret the line of best fit.

d) I can identify the most efficient way to display data.

e) I can identify the effect on mean, median, mode, and range when a set of data is changed.

f) I can analyze and interpret the shape of the data distribution to compare the center (median, mean) and spread (interquartile range, standard deviation) of two or more different data sets.

g) I can summarize, represent, and interpret data on two categorical variables.

h) I can find the probability of a simple event and compound events.

i) I can distinguish between dependent and independent events.