

Florida Algebra 1 EOC Assessment Item Specifications Report

Benchmark number	Benchmark	Content Limits
MA.912.A.1.8#:	Use the zero product property of real numbers in a variety of contexts to identify solutions to equations.	Assessed with MA.912.A.7.2
MA.912.A.2.3#:	Describe the concept of a function, use function notation, determine whether a given relation is a function, and link equations to functions.	Items may ask students to write given functions as equations. ----- In items that require students to determine the equation of a function, only continuous linear and/or quadratic functions should be used. ----- Items presenting a relation as a set of ordered pairs may not exceed 6 ordered pairs in the set. ----- In items presenting relations as graphs for the purpose of determining if the relation is a function, the graph need not be continuous. ----- Items should utilize function notation as appropriate.
MA.912.A.2.4#:	Determine the domain and range of a relation.	In items requiring students to determine the domain and/or range from an equation, only linear and quadratic functions may be used. ----- Domains and ranges may be listed as inequalities (e.g., $0 < x < 60$ for domain), or written as a sentence. ----- Items should utilize function notation, as appropriate. ----- Items may present relations in a variety of formats, including sets of ordered pairs, tables, graphs, and input/output models. ----- In items requiring students to determine the domain and/or range from a graph, only linear, quadratic, or continuous piecewise functions may be used.
MA.912.A.2.13#:	Solve real-world problems involving relations and functions.	Assessed with MA.912.A.2.3 and MA.912.A.2.4
MA.912.A.3.1#:	Solve linear equations in one variable that include simplifying algebraic expressions.	Items may include equations with the variable on both sides of the equation. ----- Items may include applications of commutative, associative, distributive, and identity properties.

MA.912.A.3.2#:	Identify and apply the distributive, associative, and commutative properties of real numbers and the properties of equality.	Assessed with MA.912.A.3.1
MA.912.A.3.3#:	Solve literal equations for a specified variable.	Items must contain more than two variables and require two or more procedural steps to complete.
MA.912.A.3.4#:	Solve and graph simple and compound inequalities in one variable and be able to justify each step in a solution.	Items will not include inequalities without a solution.
MA.912.A.3.5#:	Symbolically represent and solve multi-step and real-world applications that involve linear equations and inequalities.	Items may require students to express inequalities on a number line, or to use an inequality for a response. ----- Items may include compound inequalities presented in written format, graphically, and/or algebraically. ----- Items will not include teh use of interval notation or set notation.
MA.912.A.3.7#:	Rewrite equations of a line into slope-intercept form and standard form.	Assessed with MA.912.A.3.10
MA.912.A.3.8#:	Graph a line given any of the following information: a table of values, the x- and y-intercepts, two points, the slope and a point, the equation of the line in slope-intercept form, standard form, or point-slope form .	Items may include lines that have zero slope or undefined slope.

MA.912.A.3.9#:	Determine the slope, x-intercept, and y-intercept of a line given its graph, its equation, or two points on the line.	Items may include lines that have zero slope or undefined slope.
MA.912.A.3.10#:	Write an equation of a line given any of the following information: two points on the line, its slope and one point on the line, or its graph. Also, find an equation of a new line parallel to a given line, or perpendicular to a given line, through a given point on the new line.	Information given to determine equations of lines may include a table of values, the x- and y-intercepts, two points, the slope and a point, a graph, or an equation. ----- Items may include lines that have zero slope or undefined slope. ----- Given coordinates will be limited to rational numbers.
MA.912.A.3.11#:	Write an equation of a line that models a data set, and use the equation or the graph to make predictions. Describe the slope of the line in terms of the data, recognizing that the slope is the rate of change.	Graphs may be located in any of the quadrants. ----- Items may include linear equations in various forms, including standard, point-intercept, and point-slope forms. ----- In items assessing slope as a rate of change, the slope should be presented as a ratio.
MA.912.A.3.12#:	Graph a linear equation or inequality in two variables with and without graphing technology. Write an equation or inequality represented by a given graph.	Assessed with MA.912.A.3.8, MA.912.A.3.9, MA.912.A.3.10, and MA.912.A.3.11

MA.912.A.3.13#:	Use a graph to approximate the solution of a system of linear equations or inequalities in two variables with and without technology.	Assessed with MA.912.A.3.14
MA.912.A.3.14#:	Solve systems of linear equations and inequalities in two and three variables using graphical, substitution, and elimination methods.	Items will not specify a method for solving systems of linear equations, such as substitution or elimination. ----- Items will not assess systems of linear inequalities. ----- -- Items will not assess systems of linear equations in three variables. ----- Items may ask students to write and/or solve systems of linear equations in two variables. ----- Items may ask students to solve systems of linear equations given a graph of the system. ----- ----- In items with equations given, equations may be in the stem or options.
MA.912.A.3.15#:	Solve real-world problems involving systems of linear equations and inequalities in two and three variables.	Assessed with MA.912.A.3.14
MA.912.A.4.1#:	Simplify monomials and monomial expressions using the laws of integral exponents.	Exponents should adhere to the general content limits. ----- Items must have a variable base and may include a numerical base. ----- Monomials may have no more than three variables. ----- Items may use negative exponents.
MA.912.A.4.2#:	Add, subtract, and multiply polynomials.	Items requiring multiplication of polynomials are limited to a product of: two monomials, a monomial and a binomial, a monomial and a trinomial, or two binomials. -- ----- Items requiring addition and subtraction are limited to combining monomials, binomials, and/or trinomials. The simplified sum or difference should contain no more than five terms.
MA.912.A.4.3#:	Factor polynomial expressions.	All monomials in items will have, at most, two variables. ----- Coefficients must be integers. ----- In items requiring first factoring the greatest common factor and then factoring the remaining polynomial, the remaining polynomial must have a maximum degree of two.

MA.912.A.4.4#:	Divide polynomials by monomials and polynomials with various techniques, including synthetic division.	Items will be limited to dividing a polynomial by a monomial. ----- Synthetic division will not be assessed.
MA.912.A.5.1#:	Simplify algebraic ratios.	Assessed with MA.912.A.4.3
MA.912.A.5.4#:	Solve algebraic proportions.	Products of the means and extremes of proportions cannot exceed degree 1.
MA.912.A.6.1#:	Simplify radical expressions	Assessed with MA.912.A.6.2
MA.912.A.6.2#:	Add, subtract, multiply, and divide radical expressions (square roots and higher).	Items will assess square roots only. ----- Radicands with variables will contain positive integral exponents.
MA.912.A.7.1#:	Graph quadratic equations with and without graphing technology.	Items must use quadratic equations with integral coefficients and roots only. ----- All intercepts and vertices labeled on a graph must have integral coordinates. ----- Quadratic equations will be presented in standard form only. ----- For items requiring students to identify the graph of a quadratic equation, the equation must generate a function.
MA.912.A.7.2#:	Solve quadratic equations over the real numbers by factoring and by using the quadratic formula.	Items must have real solutions only. ----- Quadratic equations must have integer coefficients only. ----- Items may assess special forms like the difference of squares and perfect square trinomials. ----- Items will not require the use of the "completing the square" method of solving quadratic equations.
MA.912.A.7.8#:	Use quadratic equations to solve real-world problems.	Assessed with MA.912.A.7.1 and MA.912.A.7.2
MA.912.A.7.10#:	Use graphing technology to find approximate solutions of quadratic equations.	NOT ASSESSED

MA.912.A.10.1#:	Use a variety of problem-solving strategies, such as drawing a diagram, making a chart, guessing- and-checking, solving a simpler problem, writing an equation, working backwards, and creating a table.	Assessed throughout
MA.912.A.10.2#:	Decide whether a solution is reasonable in the context of the original situation.	Assessed throughout
MA.912.A.10.3#:	Decide whether a given statement is always, sometimes, or never true (statements involving linear or quadratic expressions, equations, or inequalities, rational or radical expressions, or logarithmic or exponential functions).	NOT ASSESSED
MA.912.D.7.1#:	Perform set operations such as union and intersection, complement, and cross product.	Items may include set notation and symbols from set theory. ----- Finite sets should contain no more than a total of 15 unordered elements and no more than 30 ordered elements. ----- If an item follows a numerical pattern, data may be represented by infinite sets. Example: Natural numbers {1, 2, 3, 4, ...} ----- Notation for the complement of set A will be limited to A' and $\sim A$.

MA.912.D.7.2#:	Use Venn diagrams to explore relationships and patterns and to make arguments about relationships between sets.	Items may include set notation and symbols from set theory. ----- Items should contain no more than a total of 15 ordered data points. ----- Notation for the complement of set A will be limited to A' and ~A.
MA.912.G.1.4#:	Use coordinate geometry to find slopes, parallel lines, perpendicular lines, and equations of lines.	Assessed with MA.912.A.3.10