Math Algebra I Semester 1 Final Assessment Blueprint

Year: 2024-2025 **Method of Delivery:** Online
Subject: Math **Administration Window:** December 9-19

Resources

Algebra I Curriculum Map

Standards At-A Glance

Standard	Number of Items	Standard Description
MA.9-12.A1.A-CED.A.1	2	Create equations and inequalities in one variable and use them to solve problems. Include problem-solving opportunities utilizing real-world context. Focus on linear, quadratic, exponential and piecewise-defined functions (limited to absolute value and step).
MA.9-12.A1.A-CED.A.2	7	Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.
MA.9-12.A1.A-CED.A.3	1	Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or non-viable options in a modeling context.
MA.9-12.A1.A-CED.A.4	1	Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations.
MA.9-12.A1.A-REI.A.1	1	Explain each step in solving linear and quadratic equations as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method.
MA.9-12.A1.A-REI.B.3	3	Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.
MA.9-12.A1.A-REI.C.5	1	Prove that, given a system of two equations in two variables, replacing one equation by the sum of that equation and a multiple of the other produces a system with the same solutions.
MA.9-12.A1.A-REI.C.6	1	Solve systems of linear equations exactly and approximately, focusing on pairs of linear equations in two variables. Include problem solving opportunities utilizing real-world context.
MA.9-12.A1.A-REI.D.12	3	Graph the solutions to a linear inequality in two variables as a half-plane, excluding the boundary in the case of a strict inequality, and graph the solution set to a system of linear inequalities in two variables as the intersection of the corresponding half-planes.
MA.9-12.A1.F-BF.A.1	1	Write a function that describes a relationship between two quantities. Determine an explicit expression, a recursive process, or steps for calculation from real-world context. Focus on linear, quadratic, exponential and piecewise-defined functions (limited to absolute value and step).
MA.9-12.A1.F-IF.A.1	1	Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If f is a function and x is an element of its domain, then $f(x)$ denotes the output of f corresponding to the input x. The graph of f is the graph of the equation $y = f(x)$.
MA.9-12.A1.F-IF.A.2	1	Evaluate a function for inputs in the domain, and interpret statements that use function notation in terms of a context.
MA.9-12.A1.F-IF.B.4	3	For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Include problem-solving opportunities utilizing real-world context. Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums. Focus on linear, quadratic, exponential and piecewise-defined functions (limited to absolute value and step).
MA.9-12.A1.F-IF.B.5	1	Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes.
MA.9-12.A1.F-IF.B.6	1	Calculate and interpret the average rate of change of a continuous function (presented symbolically or as a table) on a closed interval. Estimate the rate of change from a graph. Include problem-solving opportunities utilizing real-world context. Focus on linear, quadratic, exponential and piecewise-defined functions (limited to absolute value and step).
MA.9-12.A1.F-IF.C.7	1	Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases. Focus on linear, quadratic, exponential and piecewise-defined functions (limited to absolute value and step).
MA.9-12.A1.F-IF.C.8	1	Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function.
MA.9-12.A1.F-IF.C.9	1	Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). Focus on linear, quadratic, exponential and piecewise-defined functions (limited to absolute value and step).
MA.9-12.A1.F-LE.A.1.b	1	Recognize situations in which one quantity changes at a constant rate per unit interval relative to another.
MA.9-12.A1.F-LE.A.2	1	Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or input/output pairs.
MA.9-12.A1.F-LE.B.5	1	Interpret the parameters in a linear or exponential function with integer exponents utilizing real world context.
MA.9-12.A1.S-ID.B.6.a	1	Fit a function to the data; use functions fitted to data to solve problems in the context of the data. Focus on linear models.
MA.9-12.A2.A-CED.A.1	1	Create equations and inequalities in one variable and use them to solve problems. Include problem-solving opportunities utilizing real-world context. Focus on equations and inequalities arising from linear, quadratic, rational, and exponential functions.

** Some items are tagged to more than one standard.*

Depth of Knowledge

DOK	Number of Items
Level 1: Recall	3
Level 2: Skill/Concept	19
Level 3: Strategic Thinking	8

Item Types Included

Type	Number of Items	Description
MC	29	Multiple Choice - Select one answer
MR	1	Multiple Response - Select all the correct answers