



Algebra 2 Semester 2 Final Assessment Blueprint

Year: 2024-2025
Subject: Math

Method of Delivery: Online
Administration Window: May 12-22

Resources

[Algebra 2 Semester 2 Map](#)

Standards At-A Glance

Standard	Number of Items	Standard Description
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.F-IF.B.4	2	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.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-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.A.3	1	Interpret differences in shape, center, and spread in the context of the data sets, accounting for possible effects of outliers if present.
MA.9-12.A2.A-REI.A.2	3	Solve rational and radical equations in one variable, and give examples showing how extraneous solutions may arise.
MA.9-12.A2.A-SSE.B.3.c	1	Use the properties of exponents to transform expressions for exponential functions.
MA.9-12.A2.F-BF.A.1.a	1	Determine an explicit expression, a recursive process, or steps for calculation from a context.
MA.9-12.A2.F-BF.A.2	2	Write arithmetic and geometric sequences both recursively and with an explicit formula, use them to model situations, and translate between the two forms.
MA.9-12.A2.F-BF.B.3	1	Identify the effect on the graph of replacing $f(x)$ by $f(x) + k$, $k f(x)$, and $f(x - k)$ for specific values of k (both positive and negative); find the value of k given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. Include recognizing even and odd functions from their graphs and algebraic expressions for them. Functions include linear, quadratic, exponential, polynomial, logarithmic, rational, sine, cosine, tangent, square root, cube root and piecewise-defined functions.
MA.9-12.A2.F-BF.B.4	1	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.A2.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.A2.F-IF.C.8.b		Use the properties of exponents to interpret expressions for exponential functions and classify those functions as exponential growth or decay.
MA.9-12.A2.F-LE.A.4	1	For exponential models, express as a logarithm the solution to $a b^t = d$ where a , c , and d are numbers and the base b is 2, 10, or e ; evaluate the logarithms that are not readily found by hand or observation using technology.
MA.9-12.A2.F-TF.A.1	2	Understand radian measure of an angle as the length of the arc on any circle subtended by the angle, measured in units of the circle's radius.
MA.9-12.A2.F-TF.A.2	1	Explain how the unit circle in the coordinate plane enables the extension of sine and cosine functions to all real numbers, interpreted as radian measures of angles traversed counterclockwise around the unit circle.
MA.9-12.A2.F-TF.B.5	2	Create and interpret sine, cosine and tangent functions that model periodic phenomena with specified amplitude, frequency, and midline.
MA.9-12.A2.F-TF.C	2	Apply trigonometric identities.
MA.9-12.A2.F-TF.C.8		Use the Pythagorean identity $\sin^2(\theta) + \cos^2(\theta) = 1$ and the quadrant of the angle θ to find $\sin(\theta)$, $\cos(\theta)$, or $\tan(\theta)$ given $\sin(\theta)$ or $\cos(\theta)$.
MA.9-12.A2.N-RN.A.1	1	Explain how the definition of rational exponents follows from extending the properties of integer exponents to those values, allowing for a notation for radicals in terms of rational exponents.
MA.9-12.A2.N-RN.A.2	2	Rewrite expressions involving radicals and rational exponents using the properties of exponents.
MA.9-12.A2.S-CP.A.4	1	Construct and interpret two-way frequency tables of data when two categories are associated with each object being classified. Use the two-way table as a sample space to decide if events are independent and to approximate conditional probabilities.
MA.9-12.A2.S-CP.A.5	1	Recognize and explain the concepts of conditional probability and independence utilizing real-world context.
MA.9-12.A2.S-CP.B.7	1	Apply the Addition Rule, $P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$, and interpret the answer in terms of the model.
MA.9-12.A2.S-ID.A.4	1	Use the mean and standard deviation of a data set to fit it to a normal curve, and use properties of the normal distribution and to estimate population percentages. Recognize that there are data sets for which such a procedure is not appropriate. Use calculators, spreadsheets, or tables to estimate areas under the normal curve.

Depth of Knowledge

DOK	Number of Items
Level 1: Recall	18
Level 2: Skill/Concept	13
Level 3: Strategic Thinking	0

Item Types Included

Type	Number of Items	Description
MC	31	Multiple Choice - Select one answer