



STAAR Algebra II Assessment Eligible TEKS

1. Number and Algebraic Methods (9 questions)

S	2A.7A	Add, subtract, and multiply complex numbers.
S	2A.7B	Add, subtract, and multiply polynomials.
S	2A.7C	Determine the quotient of a polynomial of degree three and of degree four when divided by a polynomial of degree one and of degree two.
S	2A.7D	Determine the linear factors of a polynomial function of degree three and of degree four using algebraic methods.
R	2A.7E	Determine linear and quadratic factors of a polynomial expression of degree three and of degree four, including factoring the sum and difference of two cubes and factoring by grouping.
R	2A.7F	Determine the sum, difference, product, and quotient of rational expressions with integral exponents of degree one and of degree two.
S	2A.7G	Rewrite radical expressions that contain variables to equivalent forms.
R	2A.7H	Solve equations involving rational exponents.
S	2A.7I	Write the domain and range of a function in interval notation, inequalities, and set notation.

3. Writing and Solving Systems of Equations and Inequalities (7 questions)

R	2A.3A	Formulate systems of equations, including systems consisting of three linear equations in three variables and systems consisting of two equations, the first linear and the second quadratic.
R	2A.3B	Solve systems of three linear equations in three variables by using Gaussian elimination, technology with matrices, and substitution.
S	2A.3C	Solve, algebraically, systems of two equations in two variables consisting of a linear equation and a quadratic equation.
S	2A.3D	Determine the reasonableness of solutions to systems of a linear equation and a quadratic equation in two variables.
S	2A.3E	Formulate systems of at least two linear inequalities in two variables.
S	2A.3F	Solve systems of two or more linear inequalities in two variables.
S	2A.3G	Determine possible solutions in the solution set of systems of two or more linear inequalities in two variables.

2. Describing and Graphing Functions and Their Inverses (8 questions)

R	2A.2A	Graph the functions $f(x) = \sqrt{x}$, $f(x) = 1/x$, $f(x) = x^3$, $f(x) = \sqrt[3]{x}$, $f(x) = b^x$, $f(x) = x $, and $f(x) = \log_b(x)$ where b is 2, 10, and e , and, when applicable, analyze the key attributes such as domain, range, intercepts, symmetries, asymptotic behavior, and maximum and minimum given an interval.
S	2A.2B	Graph and write the inverse of a function using notation such as $f^{-1}(x)$.
R	2A.2C	Describe and analyze the relationship between a function and its inverse (quadratic and square root, logarithmic and exponential), including the restriction(s) on domain, which will restrict its range.
S	2A.2D	Use the composition of two functions, including the necessary restrictions on the domain, to determine if the functions are inverses of each other.
S	2A.8A	Analyze data to select the appropriate model from among linear, quadratic, and exponential models.
S	2A.8B	Use regression methods available through technology to write a linear function, a quadratic function, and an exponential function from a given set of data.
R	2A.8C	Predict and make decisions and critical judgments from a given set of data using linear, quadratic, and exponential models.

4. Quadratic and Square Root Functions, Equations, and Inequalities (10 questions)

S	2A.4A	Write the quadratic function given three specified points in the plane.
R	2A.4B	Write the equation of a parabola using given attributes, including vertex, focus, directrix, axis of symmetry, and direction of opening.
R	2A.4C	Determine the effect on the graph of $f(x) = \sqrt{x}$ when $f(x)$ is replaced by $af(x)$, $f(x) + d$, $f(bx)$, and $f(x - c)$ for specific positive and negative values of a , b , c , and d .
S	2A.4D	Transform a quadratic function $f(x) = ax^2 + bx + c$ to the form $f(x) = a(x - h)^2 + k$ to identify the different attributes of $f(x)$.
S	2A.4E	Formulate quadratic and square root equations using technology given a table of data.
R	2A.4F	Solve quadratic and square root equations.
S	2A.4G	Identify extraneous solutions of square root equations.
S	2A.4H	Solve quadratic inequalities.



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5. Exponential and Logarithmic Functions and Equations (6 questions)		
R	2A.5A	Determine the effects on the key attributes on the graphs of $f(x) = b^x$ and $f(x) = \log_b(x)$ where b is 2, 10, and e when $f(x)$ is replaced by $af(x)$, $f(x) + d$, and $f(x - c)$ for specific positive and negative real values of a , c , and d .
S	2A.5B	Formulate exponential and logarithmic equations that model real-world situations, including exponential relationships written in recursive notation.
S	2A.5C	Rewrite exponential equations as their corresponding logarithmic equations and logarithmic equations as their corresponding exponential equations.
R	2A.5D	Solve exponential equations of the form $y = ab^x$ where a is a nonzero real number and b is greater than zero and not equal to one and single logarithmic equations having real solutions.
S	2A.5E	Determine the reasonableness of a solution to a logarithmic equation.

6. Other Functions, Equations, and Inequalities (10 questions)		
S	2A.6A	Analyze the effect on the graphs of $f(x) = x^3$ and $f(x) = \sqrt[3]{x}$ when $f(x)$ is replaced by $af(x)$, $f(bx)$, $f(x - c)$, and $f(x) + d$ for specific positive and negative real values of a , b , c , and d .
S	2A.6B	Solve cube root equations that have real roots.
S	2A.6C	Analyze the effect on the graphs of $f(x) = x $ when $f(x)$ is replaced by $af(x)$, $f(bx)$, $f(x - c)$, and $f(x) + d$ for specific positive and negative real values of a , b , c , and d .
S	2A.6D	Formulate absolute value linear equations.
R	2A.6E	Solve absolute value linear equations.
S	2A.6F	Solve absolute value linear inequalities.
S	2A.6G	Analyze the effect on the graphs of $f(x) = 1/x$ when $f(x)$ is replaced by $af(x)$, $f(bx)$, $f(x - c)$, and $f(x) + d$ for specific positive and negative real values of a , b , c , and d .
S	2A.6H	Formulate rational equations that model real-world situations.
R	2A.6I	Solve rational equations that have real solutions.
S	2A.6J	Determine the reasonableness of a solution to a rational equation.
S	2A.6K	Determine the asymptotic restrictions on the domain of a rational function and represent domain and range using interval notation, inequalities, and set notation.
R	2A.6L	Formulate and solve equations involving inverse variation.

Blueprint Summary			
	Total	STAAR	
Readiness	16	60%-65%	30 – 33
Supporting	32	35%-40%	17 – 20
Total Number of Questions on Test: 45 Multiple Choice; 5 Griddable; 50 Total			