

Mathematical Process Standards						
2A.1(A)	2A.1(B)	2A.1(C)	2A.1(D)	2A.1(E)	2A.1(F)	2A.1(G)
apply mathematics to problems arising in everyday life, society, and the workplace	use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution	select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems	communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate	create and use representations to organize, record, and communicate mathematical ideas	analyze mathematical relationships to connect and communicate mathematical ideas	display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication

Rptg Cat	STAAR	Readiness Standards	Supporting Standards
1 Number and Algebraic Methods	9	<p>2A.7(E) 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</p> <p>2A.7(F) determine the sum, difference, product, and quotient of rational expressions with integral exponents of degree one and of degree two</p> <p>2A.7(H) solve equations involving rational exponents</p>	<p>2A.7(A) add, subtract, and multiply complex numbers</p> <p>2A.7(B) add, subtract, and multiply polynomials</p> <p>2A.7(C) 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</p> <p>2A.7(D) determine the linear factors of a polynomial function of degree three and of degree four using algebraic methods</p> <p>2A.7(G) rewrite radical expressions that contain variables to equivalent forms</p> <p>2A.7(I) write the domain and range of a function in interval notation, inequalities, and set notation</p>
2 Describing and Graphing Functions and Their Inverses	8	<p>2A.2(A) 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</p> <p>2A.2(C) 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</p> <p>2A.8(C) predict and make decisions and critical judgments from a given set of data using linear, quadratic, and exponential models</p>	<p>2A.2(B) graph and write the inverse of a function using notation such as $f^{-1}(x)$</p> <p>2A.2(D) use the composition of two functions, including the necessary restrictions on the domain, to determine if the functions are inverses of each other</p> <p>2A.8(A) analyze data to select the appropriate model from among linear, quadratic, and exponential models</p> <p>2A.8(B) use regression methods available through technology to write a linear function, a quadratic function, and an exponential function from a given set of data</p>
3 Writing and Solving Systems of Equations and Inequalities	7	<p>2A.3(A) 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</p> <p>2A.3(B) solve systems of three linear equations in three variables by using Gaussian elimination, technology with matrices, and substitution</p>	<p>2A.3(C) solve, algebraically, systems of two equations in two variables consisting of a linear equation and a quadratic equation</p> <p>2A.3(D) determine the reasonableness of solutions to systems of a linear equation and a quadratic equation in two variables</p> <p>2A.3(E) formulate systems of at least two linear inequalities in two variables</p> <p>2A.3(F) solve systems of two or more linear inequalities in two variables</p> <p>2A.3(G) determine possible solutions in the solution set of systems of two or more linear inequalities in two variables</p>
4 Quadratic and Square Root Functions, Equations, and Inequalities	10	<p>2A.4(B) write the equation of a parabola using given attributes, including vertex, focus, directrix, axis of symmetry, and direction of opening</p> <p>2A.4(C) 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</p> <p>2A.4(F) solve quadratic and square root equations</p>	<p>2A.4(A) write the quadratic function given three specified points in the plane</p> <p>2A.4(D) 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 $f(x)$</p> <p>2A.4(E) formulate quadratic and square root equations using technology given a table of data</p> <p>2A.4(G) identify extraneous solutions of square root equations</p> <p>2A.4(H) solve quadratic inequalities</p>
5 Exponential and Logarithmic Functions and Equations	6	<p>2A.5(A) 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, b, c, and d</p> <p>2A.5(D) 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</p>	<p>2A.5(B) formulate exponential and logarithmic equations that model real-world situations, including exponential relationships written in recursive notation</p> <p>2A.5(C) rewrite exponential equations as their corresponding logarithmic equations and logarithmic equations as their corresponding exponential equations</p> <p>2A.5(E) determine the reasonableness of a solution to a logarithmic equation</p>
6 Other Functions, Equations, and Inequalities	10	<p>2A.6(E) solve absolute value linear equations</p> <p>2A.6(I) solve rational equations that have real solutions</p> <p>2A.6(L) formulate and solve equations involving inverse variation</p>	<p>2A.6(A) 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</p> <p>2A.6(B) solve cube root equations that have real roots</p> <p>2A.6(C) 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</p> <p>2A.6(D) formulate absolute value linear equations</p> <p>2A.6(F) solve absolute value linear inequalities</p> <p>2A.6(G) 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</p> <p>2A.6(H) formulate rational equations that model real-world situations</p> <p>2A.6(J) determine the reasonableness of a solution to a rational equation</p> <p>2A.6(K) determine the asymptotic restrictions on the domain of a rational function and represent domain and range using interval notation, inequalities, and set notation</p>
# Items	50 <small>(5 Griddable)</small>	30-33 questions from Readiness Standards	17-20 questions from Supporting Standards