

Reporting Category 1: Functional Relationships		
Foundations for functions. The student understands that a function represents a dependence of one quantity on another and can be described in a variety of ways. The student is expected to:		
SE	TEKS	Question Stems
A.1A	The student describes independent and dependent quantities in functional relationships. (Supporting)	(4-2014) The independent quantity in this situation is.... (35-2013) The independent quantity in this situation is.... (15-2015) Based on the data, which statement is true if the number of calories burned is a function of the number of minutes the runner worked out?
A.1B	The student gathers and records data and uses data sets, to determine functional relationships between quantities. (Supporting)	(19-2014) Select the set of ordered pairs represents y as a function of x . (32-2013) The graph that does not represent y as a function of x is.... (46-2015) Which representation does not show y as a function of x ?
A.1C	The student describes functional relationships for given problem situations and writes equations or inequalities to answer questions arising from the situations. (Supporting)	(44-2014) Write a function that can represent the combined volume of two identical, adjacent cubes with an edge length of x . (4-2013) Write an inequality that can be used to find all possible values of t , the time it will take the family to reach Dallas, in hours. (21-2015) Which function can be used to find the total area in square feet, $A(x)$, that the contractor will use to determine how much paint he needs to buy?
A.1D	The student represents relationships among quantities using concrete models, tables, graphs, diagrams, verbal descriptions, equations, and inequalities. (Readiness)	(15-2014) Select the graph that represents the inequality $-2x + 3y > 12$. (28-2014) Select a table that represents the number of possible pairing of 2 objects modeled by the function $p(x) = 0.5x(x-1)$. (8-2013) Create a table that represents the relationship, $y = -x^2 + 3x$ in a table. (25-2013) Create multiple representations of the function h which passes through the points $(-4, 32)$, $(3, 4)$, $(5, 14)$, and $(7, 32)$. (50-2013) Represent the given graph of an inequality as an equation. (7-2015) Which representation shows the same relationship between x and y ? (49-2015) Which graph represents the inequality $-2x + 7y \leq 112$?

Question Stems

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A.1E	The student interprets and makes decisions, predictions, and critical judgments from functional relationships. (Readiness)	<p>(9-2014) Choose a true statement about this situation, when the height of a tree is represented by the function $h = 1.95(a-20)+65$, with h representing height, a representing tree age in years.</p> <p>(35-2014) Determine an ordered pair representing an additional point on a scatterplot representing a given situation.</p> <p>(54-2014) Interpret data in a table and makes a prediction from the data.</p> <p>(18-2013) Create valid statements to estimate the population of a town, given the function $p = 9,000 + 8t^2$, with p representing population, t representing time in years.</p> <p>(42-2013) Determine the total number of dishes that will be washed in a dishwasher used 9 times, based on a frequency table.</p> <p>(9-2015) If the trend shown in the graph continues, what will be the population of Webb County in 2015?</p> <p>(26-2015) The relationship between the average blue whale's weight in tons, w, and its age in days, d, for the first six months of its life can be modeled by the function $w = 0.1d + 3$. Based on this relationship, which statement is not true for the average blue whale?</p> <p>(32-2015) The function $y = 3s^2 + 32$ can be used to determine the number of members in the organization after x months. Based on this function, which statement is true?</p>
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Reporting Category 2: Properties and Attributes of Functions

Foundations for functions. The student uses the properties and attributes of functions. The student is expected to:

SE	TEKS	Question Stems
A.2A	The student identifies and sketches the general forms of linear ($y = x$) and quadratic ($y = x^2$) parent functions. (Supporting)	<p>(16-2014) Select a statement that is true for the quadratic parent function.</p> <p>(36-2013) Given a set of ordered pairs on a the graph of a function f, determine the parent function.</p> <p>(51-2015) Function k has a parent function. The table shows some ordered pairs that belong to k. Which graph shows the parent function of k?</p>
A.2B	The student identifies mathematical domains and ranges and determines reasonable domain and range values for given situations, both continuous and discrete. (Readiness)	<p>(10-2014) From a mapping of a function f, determine the domain of f, listed in set notation.</p> <p>(39-2014) From the graph of a function, select the range of the function, as listed in set notation.</p> <p>(13-2013) Provide a graphical representation of a function with a domain of all real numbers greater than 7.</p> <p>(48-2013) From a function map, determine the range of the function.</p> <p>(16-2015) What is the range of the function graphed on the grid?</p> <p>(54-2015) What is the domain for this situation?</p>

Question Stems

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A.2C	The student interprets situations in terms of given graphs or creates situations that fit given graphs. (Supporting)	(30-2014) Interpret a graph and select a situation that can be represented by the graph. (38-2015) Which graph models this situation?
A.2D	The student collects and organizes data, makes and interprets scatterplots (including recognizing positive, negative, or no correlation for data approximating linear situations), and models, predicts, and makes decisions and critical judgments in problem situations. (Readiness)	(2-2014) From a scatterplot of data indicating the relationship between the number of free throws attempted and the number of free throw made, make a prediction based on the trend of the data. (51-2014) From data represented on a scatterplot, the student recognizes the type of correlation of the data, or recognizes no correlation. (1-2013) From a scatterplot of data indicating the relationship between number of cavities and the number of times per week that patients floss their teeth, describe the correlation of the data. (38-2013) From a scatterplot depicting the relationship between the number of points on Quiz 1 and the number of points of Quiz 2 in a teacher's class, describe the data in a variety of ways. (1-2015) Based on this scatterplot, which statement appears to be true? (33-2015) Based on the scatterplot, what is the best prediction of the number of baseballs that will be used if 275 pitches are thrown?

Reporting Category 2: Properties and Attributes of Functions

Foundations for functions. The student understands how algebra can be used to express generalizations and recognizes and uses the power of symbols to represent situations. The student is expected to:

SE	TEKS	Question Stems
A.3A	The student uses symbols to represent unknowns and variables. (Supporting)	(32-2014) Given a function $y = 0.25x + 5$ describing a given situation, determine what is represented by the variable x in the function. (20-2013) Given a function describing a situation, determine what is represented by each variable in the situation. (28-2015) What does the variable x represent in this function?
A.3B	Given situations, the student looks for patterns and represents generalizations algebraically. (Supporting)	(23-2014) Given the first five terms in a pattern of numbers, determine an expression that can be used to find n th number in the pattern. (43-2013) Given the first six numbers in a pattern, determine a expression that can be used to find n th number in the pattern. (5-2015) If the pattern continues, which expression can be used to find the number of circles that make up Figure n ?

Reporting Category 2: Properties and Attributes of Functions

Foundations for functions. The student understands the importance of the skills required to manipulate symbols in order to solve problems and uses the necessary algebraic skills required to simplify algebraic expressions and solve equations and inequalities in problem situations. The student is expected to:

SE	TEKS	Question Stems
A.4A	The student finds specific function values, simplifies polynomial expressions, transforms and solves equations, and factors as necessary in problem situations. (Readiness)	<p>(8-2014) Determine the value of x, given an irregular pentagon with a perimeter of 78 cm, and side lengths represented by $(2x - 3)$, $(2x - 3)$, 12, $2x$, and x^2.</p> <p>(25-2014) Select an inequality that is equivalent to $-3x + 2y > 5y + 9$.</p> <p>(42-2014) Solve for $f(6)$ if $f(x) = \frac{2}{3}x^2 + 8x$.</p> <p>(6-2013) What are the dimensions of a rectangle in centimeters if the perimeter is 42 centimeters, the length is represented by $(x + 4)$, and the width is represented by $(2x - 7)$?</p> <p>(22-2013) Determine an equality that is equivalent to $7x - 2y > 8$.</p> <p>(23-2013) Factor the polynomial $-6x^2 - 11x - 4$ and record as the product of two binomials.</p> <p>(14-2015) What is the hourly pay in dollars and cents for the junior employee? Record your answer and fill in the bubbles on your answer document?</p> <p>(25-2015) Which function is equivalent to $f(x) = 6x^2 - 13x + 5$?</p> <p>(48-2015) If $f(x) = (x - 3)^2 + 4$ and $g(x) = x^3 + 2$, which statement is true?</p>
A.4B	The student uses the commutative, associative, and distributive properties to simplify algebraic expressions. (Supporting)	<p>(47-2014) Using the commutative, associative, and distributive properties, simplify the expression $3c(\frac{1}{3}d - 9) - 7(c + 1) + d(c + 5)$.</p> <p>(9-2013) Using the commutative, associative, and distributive properties, simplify the expression $0.5(-12c + 6) - 3(c + 4) + 10(c - 5)$, showing each step of the simplification.</p> <p>(19-2015) Which expression is equivalent to $2m(\frac{3}{2}m + 1) + 3(\frac{5}{3}m - 2)$?</p>
A.4C	The student connects equation notation with function notation, such as $y = x + 1$ and $f(x) = x + 1$. (Supporting)	<p>(20-2013) Find the value of y when $x = -7$, given the functions $y = w(x)$, $w(9) = -7$ and $w(-7) = 9$.</p>

Reporting Category 3: Linear Functions

Linear functions. The student understands that linear functions can be represented in different ways and translates among their various representations. The student is expected to:

SE	TEKS	Question Stems
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Question Stems

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A.5A	The student determines whether or not given situations can be represented by linear functions. (Supporting)	
A.5B	The student determines the domain and range for linear functions in given situations. (Supporting)	<p>(27-2014) Determine the range for the situation when the total cost of renting a banquet hall is a function of the number of hours the hall is rented and a cleaning fee.</p> <p>(39-2013) Determine the range of the function $f(c) = c/20$ when $f(c)$ represents the number of ferry trips needed to transport c cars in one day if there are no more than 5,000 cars transported daily by the ferryboat.</p> <p>(34-2015) The total cargo weight is a function of the number of containers in the plane. What is the greatest value in the domain for this situation? Record your answer and fill in the bubbles on your answer document.</p>
A.5C	The student uses, translates, and makes connections among algebraic, tabular, graphical, or verbal descriptions of linear functions. (Readiness)	<p>(1-2014) Given $y = 12x - 4$, select a situation that would be represented by the equation.</p> <p>(22-2014) Select an equation that can be represented by a given graph of a linear relationship.</p> <p>(41-2014) Select a different representation that shows the same relationship as the algebraic representation $g(x) = \frac{4}{3}(6x + 3)$.</p> <p>(7-2013) Given a graph of a linear equation, determine possible equations that would be represented by the graph.</p> <p>(21-2013) Choose a scatterplot that represents the total late fee for 3 overdue books that were checked out on the same day, if the late fee for overdue books is \$0.25 per day per book, with a maximum late fee of \$5.00.</p> <p>(49-2013) Determine a set of ordered pairs that are found only on the graph of the function of $y = 12 - 3x$.</p> <p>(11-2015) Which table shows this relationship?</p> <p>(29-2015) Which graph represents the relationship between x large boxes and y small boxes?</p> <p>(39-2015) The table represents some points on the graph of a linear function h. Which situation can be modeled by this function?</p>

Reporting Category 3: Linear Functions

Linear functions. The student understands the meaning of the slope and intercepts of the graphs of linear functions and zeros of linear functions and interprets and describes the effects of changes in parameters of linear functions in real-world and mathematical situations. The student is expected to:

SE	TEKS	Question Stems
A.6A	The student develops the concept of slope as rate of change and determines slopes from graphs, tables, and algebraic representations. (Supporting)	(3-2014) Given $y = 4 - \frac{5}{8}x$, select a table of data that shows the same rate of change of y with respect to x as the equation.

Question Stems

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		(8-2015) The slope of the line that passes through the points $(-6, w)$ and $(-10, 4)$ is $\frac{1}{8}$. What is the value of w ?
A.6B	The student interprets the meaning of slope and intercepts in situations using data, symbolic representations, or graphs. (Readiness)	<p>(17-2014) Describe the meaning of the x-intercept of a given graph that shows the relationship between the number of cookies given away by a presenter at a convention and the number of presentations made.</p> <p>(38-2014) Interpret tabular data and determine the meaning of the slope of the graph of this situation.</p> <p>(5-2013) Describe the meaning of the slope of a given graph that shows the relationship between the number of dollars a worker earns and the number of hours worked by the individual.</p> <p>(47-2013) Identify which given statements are true, based on data provided in tabular form.</p> <p>(4-2015) The function $y = 6 + 1.25x$ can be used to find the cost of joining an online music club and buying x songs from the website. Based on this information, which statement about the graph of this situation is true?</p> <p>(47-2015) What does the x-intercept of the graph represent?</p>
A.6C	The student investigates, describes, and predicts the effects of changes in m and b on the graph of $y = mx + b$. (Readiness)	<p>(7-2014) Predict the change(s) to a graph of a given linear relationship, considering y-intercept and slope.</p> <p>(29-2014) Compare $f(x) = -4x + 1$ and $g(x) = -4x + \frac{1}{2}$ with attributes when the functions are graphed.</p> <p>(45-2014) Select the graph that represents the equation of $y = \frac{2}{5}x + \frac{3}{15}$ after both the slope and y-intercept are divided by $-\frac{1}{5}$.</p> <p>(17-2013) Determine the changes that were made to the graph of a function f to make the graph of the function g.</p> <p>(33-2013) If a line p is described by the function $y = \frac{1}{5}x - 1$, and the slope of line p is multiplied by -10 to create line r, determine which given statements describe the relationship between the two lines.</p> <p>(54-2013) Determine a function that describes the new graph if the graph of $y = 9x + 4$ is translated 4 units up.</p> <p>(13-2015) Line w is steeper than line t and has a y-intercept that is below the y-intercept of line t. Which function could be represented by line w?</p> <p>(36-2015) The graph of g was translated down 10 units to create the graph of function h. Which statement comparing the graphs of g and h is true?</p> <p>(43-2015) Two functions are given below. How does the graph of p compare with the graph of q?</p>
A.6D	The student graphs and writes equations of lines given characteristics such as two points, a point and a slope, or a slope and y-intercept. (Supporting)	(48-2014) Write the equation of a line that passes through the point $(6, -8)$ and has a slope of 0.

Question Stems

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		<p>(30-2013) If a line passes through the point (1, 24) and has a slope of -0.6, determine the equation of the line and state the equation in standard form.</p> <p>(23-2015) What is the equation in standard form of the line that passes through the point (4, -8) and has a slope of $\frac{1}{4}$?</p>
A.6E	The student determines the intercepts of the graphs of linear functions and zeros of linear functions from graphs, tables, and algebraic representations. (Supporting)	<p>(27-2013) Given the graph of a linear function that passes through point (0, 5) and (2, -5), what is the zero of the function?</p> <p>(41) What is the zero of $r(x) = \frac{8}{3}x - 16$?</p>
A.6F	The student interprets and predicts the effects of changing slope and y-intercept in applied situations. (Readiness)	<p>(12-2014) Choose a statement that describes the change in the situation, when original passenger cars of a small train are replaced and function modeling the length of the train changes from $f(c) = 9c + 14$ to $h(c) = 12c + 14$, where c is the number of passenger cars attached to the locomotive.</p> <p>(36-2014) Choose statements that describe the difference in situations represented by $r = 5d + 100$ and $e = 8d + 100$, when d represents dollars spent at participating restaurants by dining club members.</p> <p>(53-2014) Given a function to model a situation, select a true statement considering the meaning of slope and the meaning of the y-intercept in this situation.</p> <p>(14-2013) Students are ordering 20 boxes of hats to sell, along with hats left from last year, as a fund raiser. How many fewer hats will the students have to sell if the function describing the number of hats available for sale changes from $f(x) = 48x + 37$ to $h(x) = 24x + 37$?</p> <p>(24-2013) Make statements that will describe the change in an airplane's descent for landing if the plane's required rate of descent changes from $f(x) = -300x + 30,000$ to $g(x) = -300x + 30,500$, where x represents the horizontal distance in miles from where the plane begins its descent.</p> <p>(44-2013) Given a graph representing water level in a tank being drained at a constant rate, determine the change in drainage time if the initial water level stays the same, but the rate at which the tank is drained changes to 3 inches per hour.</p> <p>(18-2015) If she prints in black ink only, $b(t) = 152 - 33t$ describes the number of pages left to print after t minutes. If she prints in colored ink, $c(t) = 152 - 30t$ describes the number of pages left to print after t minutes. Based on this information, which statement is true?</p> <p>(42-2015) What would be the savings in dollars and cents of parking for 6 days in the facility outside the airport instead of in the airport garage?</p>

Question Stems

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		(53-2015) The graphs show the cost of attending a county fair on Thursday and on Saturday and playing x games each day. Based on the graphs, which statement is true?
A.6G	The student relates direct variation to linear functions and solves problems involving proportional change. (Supporting)	(34-2014) Given a situation where mass varies directly with volume of a substance, solve for the volume when a proportional change occurs. (10-2013) Given a linear function where y varies directly with x , write a function relating y and x when $y = 20/3$ when $x = 30$.
Reporting Category 4: Linear Equations and Inequalities Linear functions. The student formulates equations and inequalities based on linear functions, uses a variety of methods to solve them, and analyzes the solutions in terms of the situation. The student is expected to:		
SE	TEKS	Question Stems
A.7A	The student analyzes situations involving linear functions and formulates linear equations or inequalities to solve problems. (Supporting)	(52-2014) Analyze a situation and select an inequality used to find all possible values of the dependent variable in terms of the independent variable. (45-2013) Write a function that can be used to find the total height in meters of a building, which includes a rooftop FM tower that is 15.85 meters tall and has n floors that are each 3.9 meters high. (31-2015) Which function can be used to find the amount in dollars a passenger has to pay to fly with p pieces of luggage, where $p \geq 2$?
A.7B	The student investigates methods for solving linear equations and inequalities, using concrete models, graphs, and the properties of equality, selects a method, and solves the equations and inequalities. (Readiness)	(14-2014) Solve for t in the equation $c = 24.50t + 9.50$ where c is the total cost in dollars of concert tickets and t is the number of tickets, when a student spent \$83 on tickets. (26-2014) Select the closest number of hours and minutes a jet has been flying if the jet is 1,500 miles from Los Angeles and the function $m = -475t + 2,650$ models this relationship between m , the distance in miles from Los Angeles and t , the number of flight hours. (37-2014) Choose the inequality that describes all the solutions to $5x + 7y \geq 22$ when $y = -4$.

		<p>(16-2013) If a painter charges \$950 to paint a house, which includes an hourly charge of \$35 and a \$40 fee for renting a ladder, how many hours did the painter spend painting the house?</p> <p>(31-2013) Find a coordinate pair that is the solution set for the inequality $y < 1 - 6x$.</p> <p>(32-2013) Given the equation $y = -\frac{4}{5}x - 2$, find the value of x when $y = -9$.</p> <p>(10-2015) The function below can be used to find c, the number of parking lot curbs the employee paints when he replaces r road signs in a 40-hour workweek. If the employee painted 20 curbs in one week, how many road signs did he replace that week?</p> <p>(20-2015) Based on the graph, what is the value of x when $y = -7$?</p> <p>(40-2015) Which inequality represents all the values of x for $y \leq -6(x - 18) - 2$ when $y = 46$?</p>
A.7C	For given contexts, the student interprets and determines the reasonableness of solutions to linear equations and inequalities. (Supporting)	<p>(31-2014) Select a value that is not possible for x when $(9x + 27)^\circ$ represents the measure of an obtuse angle.</p> <p>(37-2013) Calculate a reasonable number of additional weeks needed for a city to reach its average annual rainfall of 33.2 inches if 9.7 inches have fallen in the first 30 weeks and an expectation of 1.5 inches to 2.1 inches per week is expected through the end of the year.</p> <p>(2-2015) If he received more than \$10 but less than \$20, which inequality represents the number of boxes of doughnuts he could have bought?</p>
Reporting Category 4: Linear Equations and Inequalities Linear functions. The student formulates systems of linear equations from problem situations, uses a variety of methods to solve them, and analyzes the solutions in terms of the situation. The student is expected to:		
SE	TEKS	Question Stems
A.8A	The student analyzes situations and formulates systems of linear equations to solve problems. (Supporting)	<p>(6-2014) Formulate a system of equations that can be used to determine f, the number of 4-credit classes and h, the number of 3-credit classes that can be taken to complete a 40-credit degree plan.</p> <p>(12-2013) Formulate a system of equations that can be used to determine x, the number of 1-inch-thick books and y, the number of 2-inch-thick books if 9 of these books stacked together have a height of 14 inches.</p> <p>(24-2015) Which system of equations can be used to find s, the number of sheets of paper in one new spiral notebook, and m, the number of sheets of paper in one new memo book?</p> <p>(45-2015) Which system of equations can be used to determine the values of c and p?</p>

Question Stems

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A.8B	The student solves systems of linear equations using concrete models, graph, tables, and algebraic methods. (Readiness)	<p>(11-2014) Solve for the value of x in the solution to a system of equations.</p> <p>(20-2014) Solve for the total number of laptops in a computer lab with 156 computers and 8 more laptops than desktops.</p> <p>(49-2014) Interpret a graph of a system of linear equations representing a situation of costs and revenues for a manufacturing company and solve to determine the number of cases the company is required to sell to have equivalent costs and revenue.</p> <p>(3-2013) If a system of equations has no solution, which of the provided graphs best represents that situation?</p> <p>(26-2013) Find the value of x in the solution to a given system of equations.</p> <p>(40-2013) Determine the number of cupcakes sold by a high school band if the number of cupcakes was four more than twice the number of cookies sold, and the band sold 52 cupcakes and cookies.</p> <p>(6-2015) How many pairs of walking shoes and running shoes are on display?</p> <p>(35-2015) What is the value of x in the solution to this system of equations?</p> <p>(52-2015) What is the solution to the system of equations below?</p>
A.8C	The student interprets and determines the reasonableness of solutions to systems of linear equations. (Supporting)	<p>(46-2014) Interpret and situation, write and solve for the variables in a system of equations, and justify the selection of the solution.</p> <p>(23-2013) Determine the reasonableness of the decision of a class to order 72 additional large T-shirts and 144 additional medium T-shirts for a field day if the class need 216 shirts and the number of medium shirts needed is three times the number of large shirts needed.</p>

Reporting Category 5: Quadratic and Other Nonlinear Functions

Quadratic and other nonlinear functions. The student understands that the graphs of quadratic functions are affected by the parameters of the function and can interpret and describe the effects of changes in the parameters of quadratic functions. The student is expected to:

SE	TEKS	Question Stems
A.9A	The student determines the domain and range for quadratic functions in given situations. (Supporting)	
A.9B	The student investigates, describes, and predicts the effects of changes in a on the graph of $y = ax^2 + c$. (Supporting)	(19-2013) Describe the change in the graph of $y = 3x^2 - 2$ if the coefficient of x^2 is changed from 3 to another positive number.

Question Stems

2015 Algebra I STAAR EOC

A.9C	The student investigates, describes, and predicts the effects of changes in c on the graph of $y = ax^2 + c$. (Supporting)	(33-2014) Select the graph that can be obtained by translating the graph of $h(x) = 0.33x^2 + 2$ down 7 units. (27-2015) For what value of c will the graph of k be 9 units above the graph of g ? Record your answer and fill in the bubbles on your answer document.
A.9D	The student analyzes graphs of quadratic functions and draws conclusions. (Readiness)	(21-2014) Consider three quadratic functions in algebraic form and select a false statement from 4 statements listing attributes of the three functions. (43-2014) Given points $(0, 0)$ and $(4.6, 12.2)$ on the graph of a quadratic function, select a point other than $(0,0)$ at which the graph will intersect the x -axis. (2-2013) Determine the coordinates of the vertex of the graph of $f(x) = x^2 + 6x + 10$. (41-2013) Given points $(0, -5)$ and $(-6, -5)$ on the graph of a quadratic function, write an equation for the axis of symmetry of the graph of the function. (17-2015) Points $(3, 2)$ and $(7, 2)$ are on the graphs of both quadratic functions f and g . The graph of f opens downward, and the graph of g opens upward. Which of these statements are true? (I, II, III, IV) (44-2015) Based on the graph, what is the width in feet of the porch with the greatest area?

Reporting Category 5: Quadratic and Other Nonlinear Functions

Quadratic and other nonlinear functions. The student understands there is more than one way to solve a quadratic equation and solves them using appropriate methods. The student is expected to:

SE	TEKS	Question Stems
A.10A	The student solves quadratic equations using concrete models, tables, graphs, and algebraic methods. (Readiness)	(13-2014) Given 1 as a solution to $g(x) = 0$ from a table of data, select the other solution. (24-2014) Solve for x in the equation $x^2 - 4x = -1$ (40-2014) Select a statement that is true for the solutions of the equation $-4.5x^2 + 72 = 0$. (15-2013) Write the solution set for the quadratic equation $x^2 - 16 = 0$. (28-2013) Given the graph of the equation $y = x^2 + x - 6$, determine the values of x when $x^2 + x - 6 = -4$. (34-2013) From a table of values for a quadratic function, determine the solution to $f(x) = 0$ if one solution is 3. (3-2015) The graph of the quadratic function r is shown on the grid. What is a solution to $r(x) = 0$? (37-2015) What are the solutions to the equation $3x^2 + 15x = 18$? (30-2015) The function $L = 0.8T^2$ models the relationship between L , the length in feet of a pendulum, and T , the period in seconds of the pendulum. Which value is closest to the period in seconds for a pendulum that is 30 ft. long?

Question Stems

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A.10B	The student makes connections among the solutions (roots) of quadratic equations, the zeros of their related functions, and the horizontal intercepts (x-intercepts) of the graph of the function. (Supporting)	(5-2014) Based on the graph of a quadratic function g , determine the zeros of the function. (46-2013) Find the x-intercepts of the graph of the quadratic function $f(x) = 5x^2 + x - 1$
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Reporting Category 5: Quadratic and Other Nonlinear Functions		
Quadratic and other nonlinear functions. The student understands there are situations modeled by functions that are neither linear nor quadratic and models the situations. The student is expected to:		
SE	TEKS	Question Stems
A.11A	The student uses patterns to generate the laws of exponents and applies them in problem-solving situations. (Supporting)	(50-2014) Simplify a given variable expression that includes exponents, representing the solution is relation to laws of exponents. (51-2013) Simplify a given variable expression that includes exponents. (12-2015) Which expression represents the volume in cubic inches of this rectangular prism?
A.11B	The student analyzes data and represents situations involving inverse variation using concrete models, tables, graphs, or algebraic methods. (Supporting)	(18-2014) Select the function modeling the inverse relationship between the distance from a pivot point on a lever to the force required to move a rock. (50-2015) If the value of y varies inversely with x , which function represents the relationship between x and y if $y = 48$ when $x = 3$?
A.11C	The student analyzes data and represents situations involving exponential growth and decay using concrete models, tables, graphs, or algebraic methods. (Supporting)	(11-2013) From the provided table of values form an exponential function f , choose a situation that could describe the function. (22-2015) Based on the information in the graph, which conclusion appears to be true?