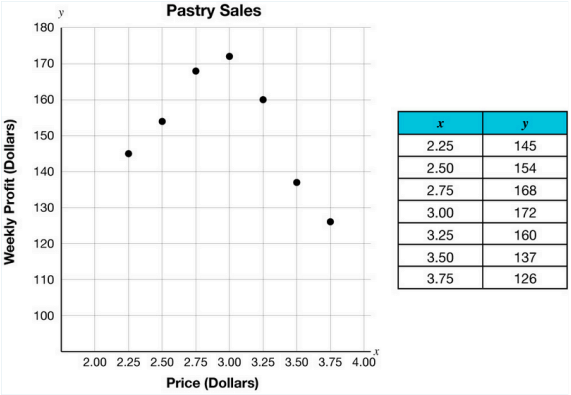
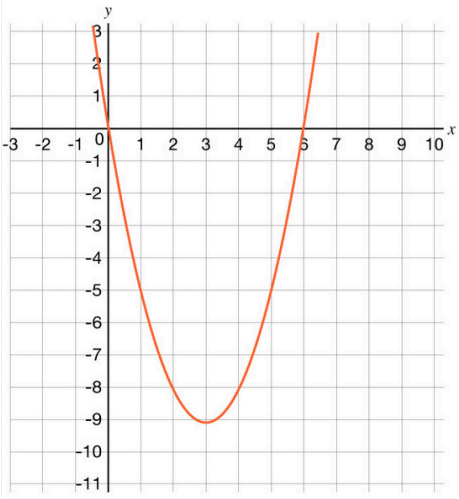
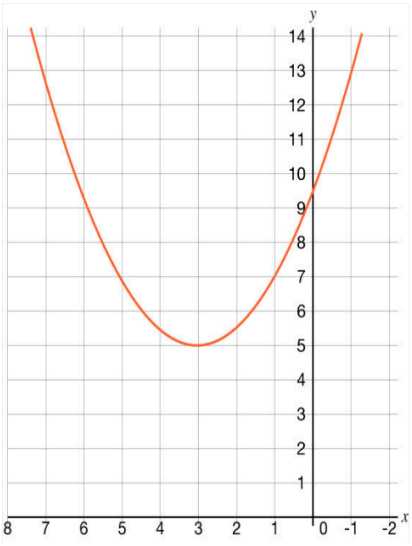
Unit 8 STAAR Review

	Question	TEKS	Exam/ Question#	Unit
1	Which value of x is a solution to this equation? $3x^2 - 30x - 72 = 0$ **A** $x = -12$ **B** $x = -4$ **C** $x = -2$ [correct answer] **D** $x = -6$	A.8(A)	2021/ Question#23	8
2	What is the solution set for $2x^2 + 15 = -11x$? **A** $\{-5, -1.5\}$ **B** $\{2.5, 3\}$ **C** $\{1.5, 5\}$ **D** $\{-3, -2.5\}$ [correct answer]	A.8(A)	2021/ Question#37	8

	Question	TEKS	Exam/ Question#	Unit
3	The scatterplot and table show the weekly profit in dollars earned from the sale of pastries at seven different prices. The data can be modeled by a quadratic function.  x | y 2.25 | 145 2.50 | 154 2.75 | 168 3.00 | 172 3.25 | 160 3.50 | 137 3.75 | 126 Which function best models the data? **A** $y = 0.001x^2 - 0.426x + 35.672$ **B** $y = -60.4x^2 + 348.1x - 334.2$ [correct answer] **C** $y = 0.001x^2 + 35.672$ **D** $y = -60.4x^2 - 334.2$	A.8(B)	2021/ Question#47	8

	Question	TEKS	Exam/ Question#	Unit
4	A company collected data for the number of text messages sent and received using a text-message application since October 2011. The table shows the number of text messages sent and received in billions over time. The data can be modeled by a quadratic function. **Number of Months since October 2011 t** / **Number of Text Messages, $n(t)$ (billions)** 5 / 3 10 / 10 15 / 17 20 / 27 25 / 44 30 / 64 35 / 84 40 / 112 Which function best models the data? **A** $n(t) = -0.002t^2 + 0.55t + 5.02$ **B** $n(t) = 0.072t^2 - 0.15t + 2.73$ [correct answer] **C** $n(t) = -0.002t^2 + 5.02$ **D** $n(t) = 0.072t^2 + 2.73$	A.8(B)	2019/ Question#19	8

	Question	TEKS	Exam/ Question#	Unit
5	The graph of a quadratic function is shown on the grid.  Which function is best represented by this graph? **A** $h(x) = x^2 - 3x - 9$ **B** $h(x) = x^2 + 3x - 9$ **C** $h(x) = x^2 - 6x$ [correct answer] **D** $h(x) = x^2 + 6x$	A.6(C)	2019/ Question#28	8

	Question	TEKS	Exam/ Question#	Unit
6	A quadratic function is graphed on the grid.  Which answer choice best represents the domain and range of the function? **A** Domain: $x \geq -3$ Range: $y \geq 5$ **B** Domain: All real numbers [correct answer] Range: $y \geq 5$ **C** Domain: $x \geq -3$ Range: All real numbers **D** Domain: $y \geq 5$ Range: $x \geq -3$	A.6(A)	2021/ Question#43	7

<table>
<tr><th></th><th>Question</th><th>TEKS</th><th>Exam/ Question#</th><th>Unit</th></tr>
<tr><td>7</td><td>Which expression is equivalent to $x^2 + 10x + 24$?
A $(x + 1)(x + 24)$
B $(x + 2)(x + 12)$
C $(x + 3)(x + 8)$
D $(x + 4)(x + 6)$ [correct answer]</td><td>A.10(E)</td><td>2021/ Question#45</td><td>7</td></tr>
<tr><td>8</td><td>The table represents some points on the graph of an exponential function.
<table><tr><th>x</th><th>y</th></tr><tr><td>-2</td><td>12.5</td></tr><tr><td>-1</td><td>15</td></tr><tr><td>0</td><td>18</td></tr><tr><td>1</td><td>21.6</td></tr><tr><td>2</td><td>25.92</td></tr></table>Which function represents the same relationship?
A $f(x) = 15(\frac{5}{6})^x$
B $f(x) = 18(\frac{6}{5})^x$ [correct answer]
C $f(x) = 15(\frac{6}{5})^x$
D $f(x) = 18(\frac{5}{6})^x$</td><td>A.9(C)</td><td>2019/ Question#31</td><td>5</td></tr>
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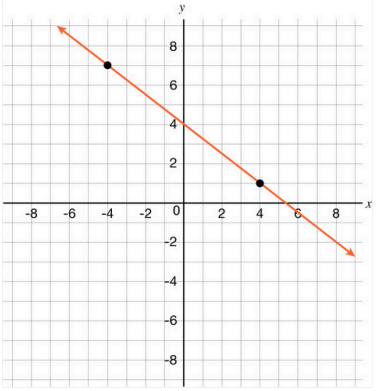
	Question	TEKS	Exam/ Question#	Unit
9	The graph of a linear function is shown on the grid.  What is the rate of change of y with respect to x for this function? **A** $\frac{7}{9}$ **B** $-\frac{7}{9}$ **C** $\frac{3}{4}$ **D** $-\frac{3}{4}$ [correct answer]	A.3(B)	2021/ Question#25	4

	Question	TEKS	Exam/ Question#	Unit
10	A customer at a store paid \$64 for three large candles and four small candles. At the same store, a second customer paid \$4 more than the first customer for one large candle and eight small candles. The price of each large candle is the same, and the price of each small candle is the same. Which system of equations can be used to find the price in dollars of each large candle, x, and each small candle, y? **A** $4y = 3x + 64$ $8y = x + 68$ **B** $4y = 3x + 64$ $8y = x + 60$ **C** $3x + 4y = 64$ [correct answer] $x + 8y = 68$ **D** $3x + 4y = 64$ $x + 8y = 60$	A.2(I)	2019/ Question#51	2