

Algebra I

2011 Released Test Questions

These released questions represent selected TEKS student expectations for each reporting category. These questions are samples only and do not represent all the student expectations eligible for assessment.

- 1 The sales tax rate at a clothing store is 8.75%. Sales tax on an item is a function of its price. Which of the following is the dependent quantity in this function?
- A The sales tax rate on the item
 - B The item's price
 - C The amount of sales tax on the item
 - D The item's size

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- 2 Which of the following relations is a function?

- I. $\{(0, 0), (0, 1), (0, 2)\}$
- II. $\{(0, 0), (1, 1), (2, 4)\}$
- III. $\{(0, 0), (1, 2), (2, 2)\}$
- IV. $\{(0, 0), (1, 2), (1, 3)\}$

- A I, II, and III only
- B I and II only
- C II and III only
- D III and IV only

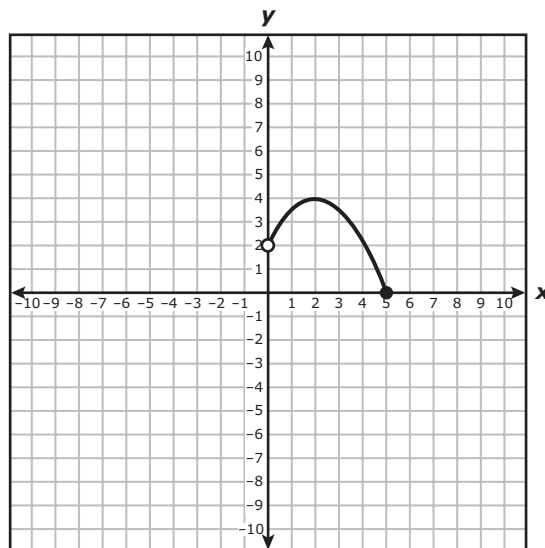
- 3 Southern Phone Company is promoting a new cell phone service plan: a customer can make up to 500 minutes of calls each month for \$39.99. If the number of minutes used in a month exceeds 500, then the function

$$c = 0.40(m - 500) + 39.99$$

describes the monthly charge, c , in dollars in terms of m , the total number of minutes used. Which of the following statements best describes this function?

- A** If the total number of minutes used is more than 500, then every minute beyond 500 costs 40 cents.
- B** Every minute used costs 40 cents, regardless of the total number of minutes used.
- C** The first 500 minutes used costs 40 cents each, after which there is an additional charge of \$39.99.
- D** If the total number of minutes used is more than 500, then every minute used costs 40 cents.

- 4 What is the domain of the function graphed below?



- A** $0 < x \leq 5$
- B** $2 < x \leq 5$
- C** $0 < x \leq 4$
- D** $0 < x < 2$

- 5 In the quadratic equation $x^2 - x + c = 0$, c represents an unknown constant. If $x = -3$ is one of the solutions to this equation, what is the value of c ?

Record your answer and fill in the bubbles on your answer document.

- 6 Which of the following is not a correct description of the graph of the function $y = -2x - 7$?
- A The graph of the function contains the point $(-2, -3)$, and when the value of x increases by 1 unit, the value of y decreases by 2 units.
 - B The graph of the function contains the points $(-1, -5)$, $(2, -11)$, and $(4, -15)$.
 - C The graph of the function is a line that passes through the point $(0, -7)$ with a slope of -2 .
 - D The graph of the function contains the points $(0, -7)$, $(1, -9)$, and $(3, -1)$.
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- 7 If $(2k, k)$ and $(3k, 4k)$ are two points on the graph of a line and k is not equal to 0, what is the slope of the line?
- A 3
 - B $3k$
 - C $\frac{1}{3}$
 - D Not here

- 8** The amount an appliance repairman charges for each job is represented by the function $t = 50h + 35$, where h represents the number of hours he spent on the job and t represents the total amount he charges in dollars for the job. The repairman plans to change the amount he charges for each job. The amount he plans to charge is represented by the function $t = 50h + 45$. What will be the effect of this change on the amount he charges for each job?
- A** The total amount he charges for each job will increase by \$10.
 - B** The total amount he charges for each job will decrease by \$10.
 - C** The amount he charges per hour will increase by \$10.
 - D** The amount he charges per hour will decrease by \$10.
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- 9** The sum of the perimeters of two different squares is 32 centimeters, and the difference between their perimeters is 8 centimeters. If x represents the side length of the larger square and y represents the side length of the smaller square, which of the following systems of equations could be used to find the dimensions of the squares?
- A** $x + y = 32$
 $x - y = 8$
 - B** $4x + 4y = 32$
 $4x - 4y = 8$
 - C** $2x + 2y = 32$
 $2y - 2x = 8$
 - D** $4x + 2y = 32$
 $4x - 2y = 8$

10 Some values for two linear equations are shown in the tables below.

Equation 1

x	y
2	5
-4	-7
5	11
-1	-1

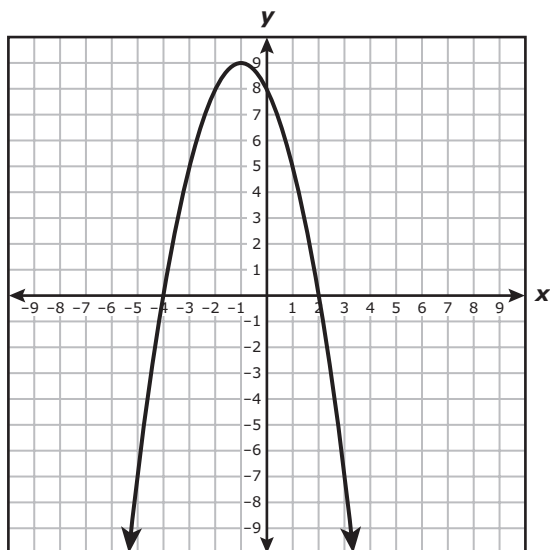
Equation 2

x	y
5	11
-3	-13
0	-4
1	-1

What is the solution to the system of equations represented by these tables?

- A (2, 3)
- B (3, 5)
- C (-1, 1)
- D (5, 11)

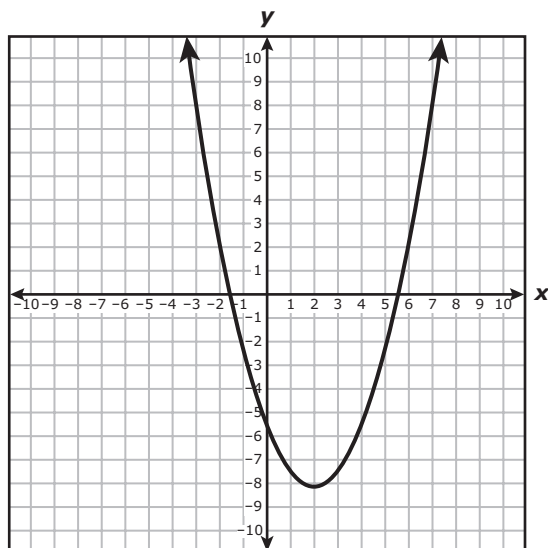
11 The graph of a quadratic function is shown below.



Which statement about this graph is not true?

- A The graph has a y -intercept at $(0, 8)$.
- B The graph has a maximum point at $(-1, 9)$.
- C The graph has an x -intercept at $(2, 0)$.
- D The graph has the y -axis as a line of symmetry.

12 The graph of a quadratic function is shown below.



What is the best estimate of the positive value of x for which this function equals 8?

- A 2
- B 4
- C 13
- D 7

13 A population of 1500 deer decreases by 1.5% per year. At the end of 10 years, there will be approximately 1290 deer in the population. Which function can be used to determine the number of deer, y , in this population at the end of t years?

- A $y = 1500(1 - 0.015)^t$
- B $y = 1500(0.015)^t$
- C $y = 1500(1 + 0.015)^t$
- D $y = 1500(1.5)^t$

Item Number	Reporting Category	Readiness or Supporting	Content Student Expectation	Correct Answer
1	1	Supporting	A.1(A)	C
2	1	Supporting	A.1(B)	C
3	1	Readiness	A.1(E)	A
4	2	Readiness	A.2(B)	A
5	2	Readiness	A.4(A)	-12
6	3	Readiness	A.5(C)	D
7	3	Supporting	A.6(A)	A
8	3	Readiness	A.6(F)	A
9	4	Supporting	A.8(A)	B
10	4	Readiness	A.8(B)	D
11	5	Readiness	A.9(D)	D
12	5	Readiness	A.10(A)	D
13	5	Supporting	A.11(C)	A

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