

## Algebra 1 Quick-Quiz-12162024

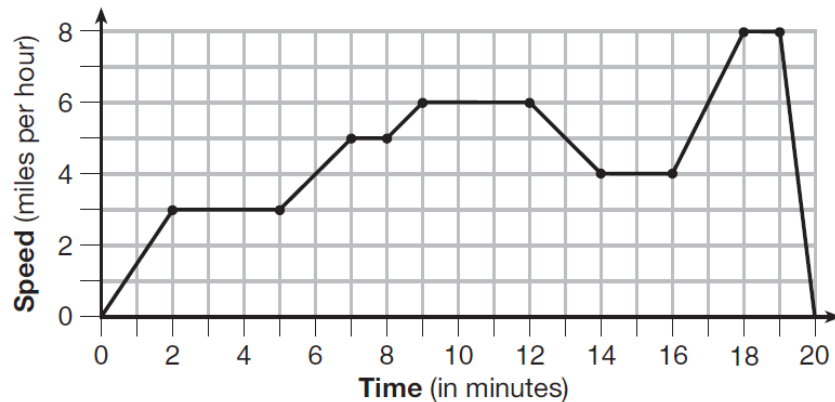
### Question 1.

The cost of airing a commercial on television is modeled by the function  $C(n) = 110n + 900$ , where  $n$  is the number of times the commercial is aired. Based on this model, which statement is true?

- (1) The commercial costs \$0 to produce and \$110 per airing up to \$900.
- (2) The commercial costs \$110 to produce and \$900 each time it is aired.
- (3) The commercial costs \$900 to produce and \$110 each time it is aired.
- (4) The commercial costs \$1010 to produce and can air an unlimited number of times.

### Question 2

The graph below represents a jogger's speed during her 20-minute jog around her neighborhood.



Which statement best describes what the jogger was doing during the 9–12 minute interval of her jog?

- (1) She was standing still.
- (2) She was increasing her speed.
- (3) She was decreasing her speed.
- (4) She was jogging at a constant rate.

Question 3.

If the area of a rectangle is expressed as  $x^4 - 9y^2$ , then the product of the length and the width of the rectangle could be expressed as

- (1)  $(x - 3y)(x + 3y)$                       (3)  $(x^2 - 3y)(x^2 - 3y)$   
(2)  $(x^2 - 3y)(x^2 + 3y)$                   (4)  $(x^4 + y)(x - 9y)$

Question 4.

Which table represents a function?

<b>x</b>	2	4	2	4
<b>f(x)</b>	3	5	7	9

(1)

<b>x</b>	3	5	7	9
<b>f(x)</b>	2	4	2	4

(3)

<b>x</b>	0	-1	0	1
<b>f(x)</b>	0	1	-1	0

(2)

<b>x</b>	0	1	-1	0
<b>f(x)</b>	0	-1	0	1

(4)

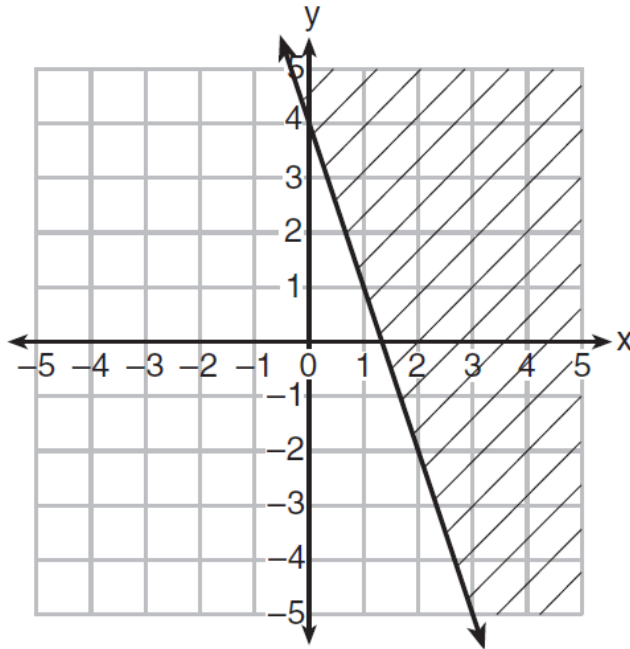
Question 5.

Which statement is *not* always true?

- (1) The sum of two rational numbers is rational.  
(2) The product of two irrational numbers is rational.  
(3) The sum of a rational number and an irrational number is irrational.  
(4) The product of a nonzero rational number and an irrational number is irrational.

Question 6

Which inequality is represented in the graph below?



(1)  $y \geq -3x + 4$

(2)  $y \leq -3x + 4$

(3)  $y \geq -4x - 3$

(4)  $y \leq -4x - 3$

Question 7.

Use your graphing software only to check your answer. You are capable of doing this without graphing software.

What are the zeros of the function  $f(x) = x^2 - 13x - 30$ ?

(1)  $-10$  and  $3$

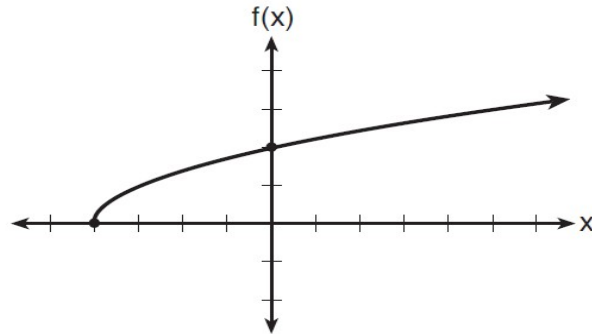
(2)  $10$  and  $-3$

(3)  $-15$  and  $2$

(4)  $15$  and  $-2$

### Question 8

The graph of the function  $f(x) = \sqrt{x + 4}$  is shown below.



The domain of the function is

- (1)  $\{x | x > 0\}$                       (3)  $\{x | x > -4\}$   
(2)  $\{x | x \geq 0\}$                       (4)  $\{x | x \geq -4\}$

### Question 9.

You should be able to figure this out without graphing software but use it if you have to.

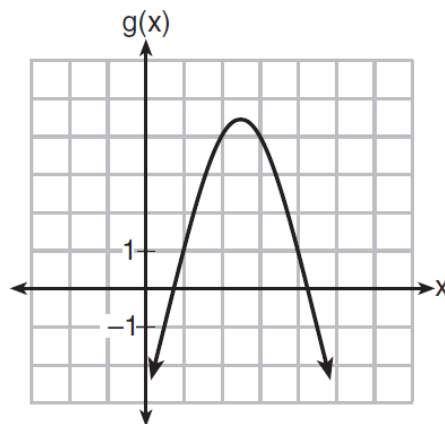
Which quadratic function has the largest maximum?

$h(x) = (3 - x)(2 + x)$   
(1)

$k(x) = -5x^2 - 12x + 4$   
(3)

x	f(x)
-1	-3
0	5
1	9
2	9
3	5
4	-3

(2)



(4)

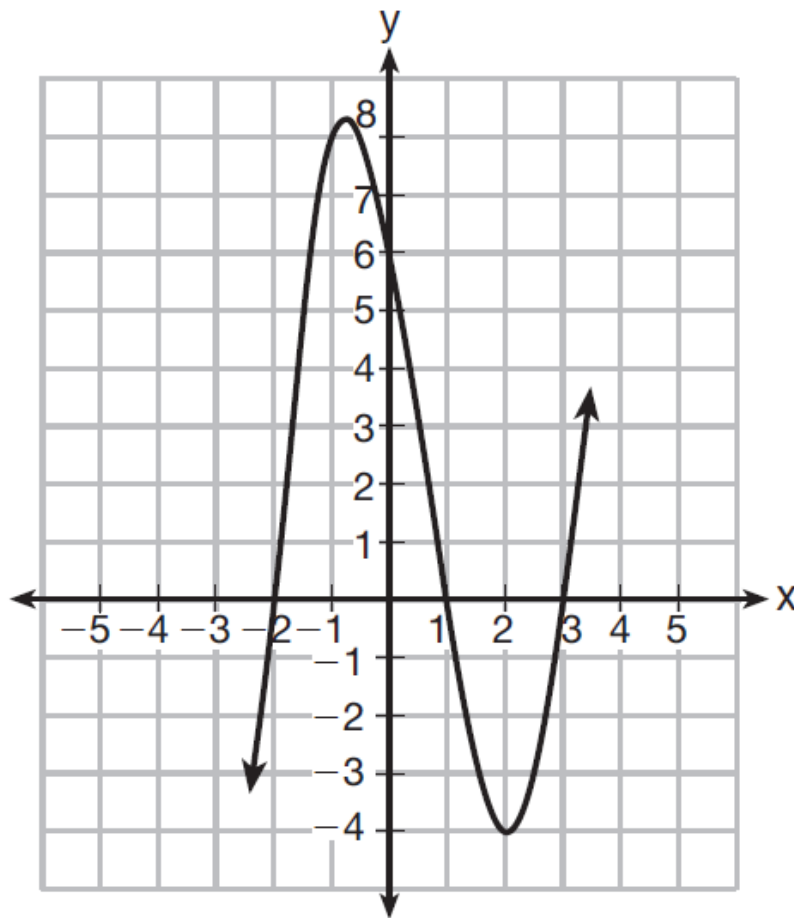
Question 10.

Which equation(s) represent the graph below?

I  $y = (x + 2)(x^2 - 4x - 12)$

II  $y = (x - 3)(x^2 + x - 2)$

III  $y = (x - 1)(x^2 - 5x - 6)$



(1) I, only

(2) II, only

(3) I and II

(4) II and III

## Bonus Question

### Question 11

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**Part A**

At a clothing store, Ted bought 4 shirts and 2 ties for a total price of \$95. At the same store, Stephen bought 3 shirts and 3 ties for a total price of \$84. Each shirt was the same price, and each tie was the same price. Which system of equations can be used to find  $s$ , the cost of each shirt in dollars, and  $t$ , the cost of each tie in dollars?

- A. 
$$\begin{cases} 6(s + t) = 95 \\ 3(s + t) = 84 \end{cases}$$
- B. 
$$\begin{cases} 4s + 2t = 95 \\ 3s + 3t = 84 \end{cases}$$
- C. 
$$\begin{cases} 7s + 5t = 179 \\ s + t = 12 \end{cases}$$
- D. 
$$\begin{cases} 7s + 5t = 179 \\ 7s + 5t = 12(s + t) \end{cases}$$

**Part B**

Linda bought 1 shirt and 2 ties at the same store. What is the total price, in dollars and cents, of Linda's purchase?

Enter your answer in the box.