Algebra 1 Quick-Quiz-12122023

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.

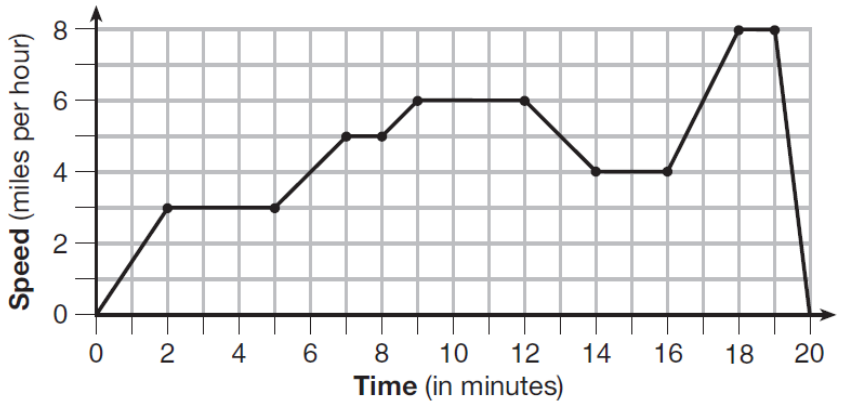
(2) The commercial costs \$110 to produce and \$900 each time it is aired.

(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) $(x - 3y)(x + 3y)$

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

(3) $(x^2 - 3y)(x^2 - 3y)$

(4) $(x^4 + y)(x - 9y)$

Question 4.

Which table represents a function?

x	2	4	2	4
f(x)	3	5	7	9

(1)

x	3	5	7	9
f(x)	2	4	2	4

(3)

x	0	−1	0	1
f(x)	0	1	−1	0

(2)

x	0	1	−1	0
f(x)	0	−1	0	1

(4)

Question 5.

Which statement is *not* always true?

(1) The sum of two rational numbers is rational.

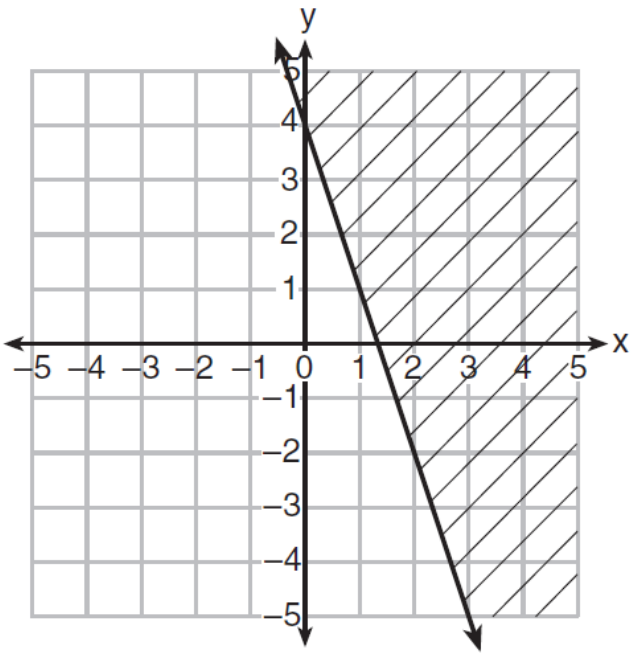
(2) The product of two irrational numbers is rational.

(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

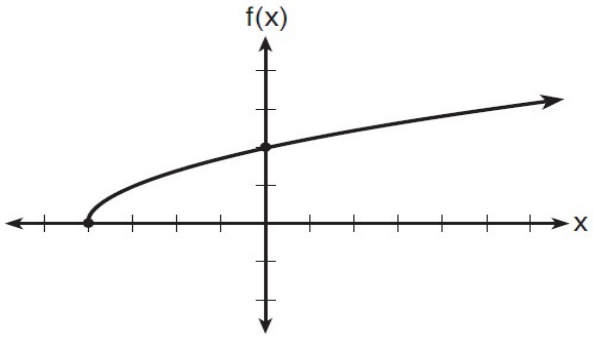
(2) 10 and -3

(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) $\{x|x > 0\}$

(2) $\{x|x \geq 0\}$

(3) $\{x|x > -4\}$

(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?

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

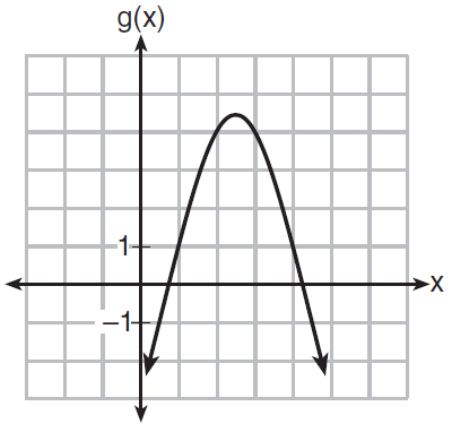
(1)

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

(3)

x	f(x)
−1	−3
0	5
1	9
2	9
3	5
4	−3

(2)



(4)

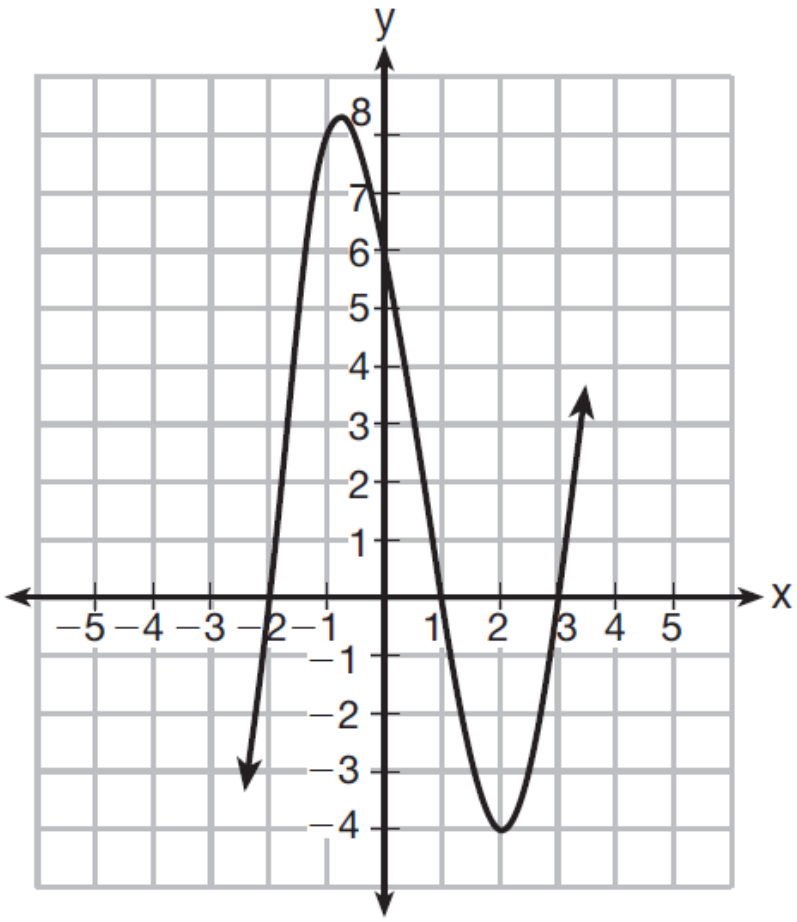
Question 10.

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

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.