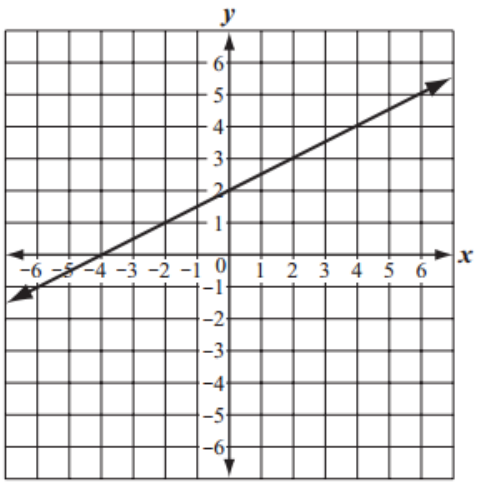
Algebra Quick-Quiz-03222022

Question 1.

1 The graph below shows a relationship between x and y.



Which of the following equations best represents this relationship?

A. $y = 2x$

B. $y = x + 2$

C. $y = \frac{1}{2}x + 2$

D. $y = 2x + \frac{1}{2}$

Question 2

What is the value of the expression below?

$$8 - 3\sqrt{16}$$

A. -40

B. -4

C. 2

D. 20

Question 3.

What are the solutions to the system of equations below?

$$3y = x - 2$$
$$y = -2x + 4$$

A. $x = 0; \quad y = 2$

B. $x = 1; \quad y = -2$

C. $x = 2; \quad y = 0$

D. $x = -2; \quad y = 4$

Question 4.

Which values of x and y make the system of equations below true?

$$2x - y = -1$$
$$3x - y = -3$$

A. $x = -4; \ y = -7$

B. $x = -2; \ y = -3$

C. $x = 2; \ y = 5$

D. $x = 4; \ y = 15$

Question 5.

The sum of the lengths of any two sides of a triangle must be greater than the length of the remaining side.

The lengths of two sides of a triangle are 8 inches and 13 inches. Which of the following represents x, the possible length in inches of the remaining side of the triangle?

A. $5 < x < 21$

B. $5 \leq x \leq 21$

C. $x < 5$ or $x > 21$

D. $x \leq 5$ or $x \geq 21$

Question 6.

Which of the following is equivalent to the expression below?

$$25 - 9x^2$$

A. $(5 + 3x)(5 - 3x)$

B. $(5 - 3x)(5 - 3x)$

C. $(3x + 5)(3x - 5)$

D. $(3x - 5)(3x - 5)$

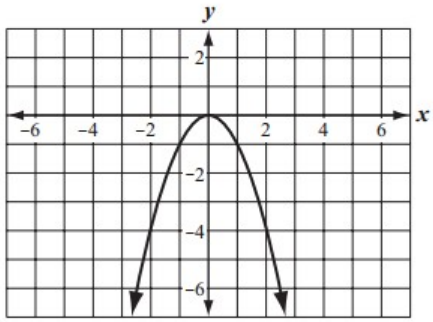
Question 7.

What is **one** solution of the quadratic equation below?

$$x^2 + 3x - 10 = 0$$

Question 8.

14 A function is graphed on the coordinate grid below.



Which of the following statements best describes the function?

A. As the value of x increases, the value of y increases for all values of x.

B. As the value of x increases, the value of y decreases for all values of x.

C. As the value of x increases, the value of y increases for positive values of x only.

D. As the value of x increases, the value of y decreases for positive values of x only.

Question 9.

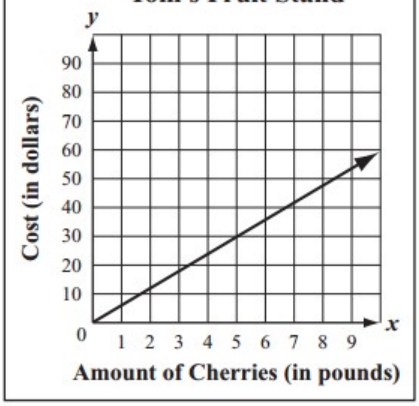
Julia and Tom each have a fruit stand. The information in the boxes below can be used to determine the costs, in dollars, of cherries at the two fruit stands.

Julia's Fruit Stand

$y = 4.5x$,

where y equals the total cost, in dollars, of x pounds of cherries

Tom's Fruit Stand



Based on the information, which of the following statements **best** compares the costs of cherries at the two fruit stands?

A. Cherries cost \$1.50 more per pound at Julia's Fruit Stand than at Tom's Fruit Stand.

B. Cherries cost \$2.50 more per pound at Julia's Fruit Stand than at Tom's Fruit Stand.

C. Cherries cost \$1.50 more per pound at Tom's Fruit Stand than at Julia's Fruit Stand.

D. Cherries cost \$2.50 more per pound at Tom's Fruit Stand than at Julia's Fruit Stand.

Question 10.

Jay and Kalani graphed lines on a coordinate plane. Jay's line is represented by the equation below.

$$y = 2x - 5$$

Kalani's line is parallel to Jay's line. Which of the following could be an equation of Kalani's line?

A. $2x + y = -5$

B. $-2x + y = 5$

C. $x + 2y = -5$

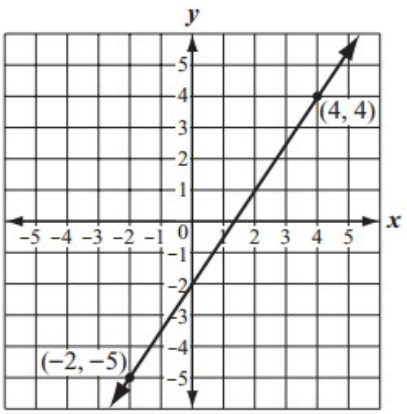
D. $-x + 2y = 5$

Bonus Question

Question 11

11 Each of the four functions below shows a relationship between x and y.

- Function H:



- Function I: $y = 2.5x + 8$
- Function J: Multiply the x value by 3 and subtract 6 to get the y value.
- Function K:

x	y
−2	4
0	6
2	8
4	10
6	12

a. What is the slope of the line that represents Function H? Show or explain how you got your answer.

b. Write an equation in terms of x and y to represent the graph of **Function J**.

c. What is the y-intercept of **Function K**? Show or explain how you got your answer.

d. List the four functions in order from the function with the least rate of change to the function with the greatest rate of change.