

Algebra 1 Quick quiz 04252023

Question 1

Multiply the polynomials $(x + 3)(2x - 4)$. What is the product in the form $ax^2 + bx + c$?

Enter your answers in the boxes.

$$a = \text{[]}$$

$$b = \text{[]}$$

$$c = \text{[]}$$

Question 2

What are the solutions to the equation $(2x + 1)^2 - (x + 13) = 3x^2 - 2x + 2$?

Question 3.

Select the values and signs from the drop-down menus that correctly complete the solution by factoring.

$$x^2 - 4x + 3 = 0$$

$$(x \text{ [Choose..] } \text{[Choose..]}) (x \text{ [Choose..] } \text{[Choose..]})$$

Sign menu: +, -
Value menu: 1, 2, 3, 4

$$x = \text{[Choose..]}; x = \text{[Choose..]}$$

Value menu: -4, -3, 1, 2

Value menu: -2, -1, 3, 4

Question 4.

Which quadratic equation has nonreal roots?

- A. $x^2 - 4x + 3 = 0$
- B. $x^2 - 4x + 4 = 0$
- C. $x^2 - 4x + 5 = 0$
- D. $x^2 - 5x + 6 = 0$

Question 5.

A queen-sized mattress is 20 inches longer than it is wide. A king-sized mattress is 16 inches wider than the queen-sized mattress but has the same length. The area of the king-sized mattress is 1,280 square inches more than that of the queen-sized mattress.

Part A

Write an equation that can be used to determine the area of the king-sized mattress. Define all variables used.

Question 6.

Part B

Determine the dimensions of the king-sized and queen-sized mattresses. Show your work.

Question 7.

The point $(3,w)$ is on the graph of $y = 2x + 7$. What is the value of w ?

- (1) -2
- (2) -4
- (3) 10
- (4) 13

Question 8.

When the expression $2x(x - 4) - 3(x + 5)$ is written in simplest form, the result is

- (1) $2x^2 - 11x - 15$
- (2) $2x^2 - 11x + 5$
- (3) $2x^2 - 3x - 19$
- (4) $2x^2 - 3x + 1$

Question 9.

For $f(x) = 24 - 2x$, find $f(2)$ and find x such that $f(x) = 10$.

- a. $28; 12$
- b. $22; 4$
- c. $20; 7$
- d. $22; 7$

Question 10.

If you graph $y = x^2 - 6x + 9$, the y -intercept of the graph of the equation is

- a. -3
- b. 9
- c. 2
- d. 0

Bonus Question

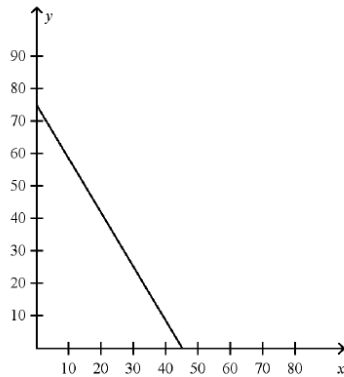
Question 11

Reserved tickets for the football game cost \$20 each and general admission tickets cost \$12 each. The total ticket sales brought in \$900. The equation below can be used to find out how many of each type of ticket were sold, where x is the number of reserved tickets and y is the number of general admission tickets.

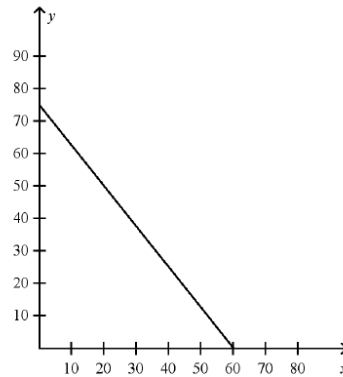
$$20x + 12y = 900$$

Which of the following graphs shows the graph of this equation?

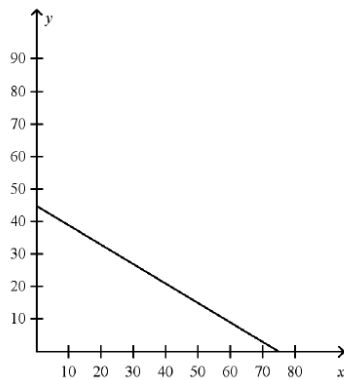
a.



c.



b.



d.

