

Algebra 2 Quick Quiz 12062022

Question 1.

Profits, P , are equal to sales, S , minus expenses, E . If expenses are equal to travel, T , plus materials, M , which system of equations models this situation?

- | | | | |
|---|----------------------------|---|----------------------------|
| A | $P = S - E$
$E = T + M$ | B | $P = S + E$
$E = T + M$ |
| C | $P = S - E$
$E = T - M$ | D | $P = S + E$
$E = T - M$ |

Question 2

Tyrone wants to spend at most \$10,000 on two televisions, R and S . Each television must cost at least \$3,000, and television R must cost at least twice as much as television S . Which system of inequalities models the amount of money spent on each television?

- | | | | |
|---|--|---|--|
| | $R + S \geq 10,000$ | | $R + S \leq 10,000$ |
| A | $R \geq 2S$
$R \geq 3,000$
$S \geq 3,000$ | B | $S \geq 2R$
$R \geq 3,000$
$S \geq 3,000$ |
| C | $R + S \leq 10,000$
$R \geq 2S$
$R \geq 3,000$
$S \geq 3,000$ | D | $R + S \geq 10,000$
$S \geq 2R$
$R \geq 3,000$
$S \geq 3,000$ |

Question 3.

Meredith invests \$50,000 in her new business. It costs the company \$10 to produce each unit, which is sold for \$15. Let C represent the cost and R represent the revenue for x units. Which statement is true about the graphs of the equations $C = 50,000 + 10x$ and $R = 15x$?

- A Both slopes are positive.
- B Both slopes are negative.
- C One slope is positive, and the other is zero.
- D One slope is negative, and the other is positive.

Question 4.

Which quadrants contain the solutions to this system of inequalities?

$$\begin{cases} y - 2x \leq -3 \\ 3y + x \geq -4 \end{cases}$$

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

Question 5.

What is the solution to this system of equations? $\begin{cases} 3x - y + 5 = 0 \\ 2x + 3y - 4 = 0 \end{cases}$

- A $x = -1, y = -2$
- B $x = -1, y = 2$
- C $x = 2, y = -1$
- D $x = 2, y = 1$

Question 6.

What is the solution set of this system of equations?

$$\begin{cases} x^2 + y - 1 = 0 \\ x - y + 1 = 0 \end{cases}$$

- A $\{(-1, -1), (-1, 0)\}$
- B $\{(-1, 0), (-1, 1)\}$
- C $\{(-1, 0), (0, 1)\}$
- D $\{(1, 0), (1, 1)\}$

Question 7.

What is the solution set of this system of equations?

$$\begin{cases} y - x = 3 \\ x^2 - 7y + 31 = 0 \end{cases}$$

- A $\{(2, 5), (5, 2)\}$
- B $\{(2, 5), (5, 8)\}$
- C $\{(5, 8), (8, 5)\}$
- D $\{(8, 5), (8, 8)\}$

Question 8.

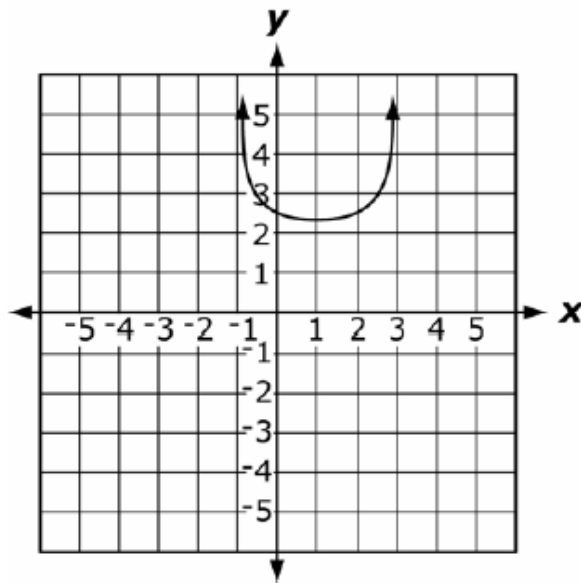
What is the solution set of this system of equations?

$$\begin{cases} x^2 - y = -3 \\ 2x^2 - y = -2 \end{cases}$$

- A $\{(-1, -4), (-1, 4)\}$
- B $\{(-1, -4), (1, 4)\}$
- C $\{(-1, 4), (1, -4)\}$
- D $\{(-1, 4), (1, 4)\}$

Question 9.

How many real roots does the function given by the graph have?



- A 0 real roots
- B 1 real root
- C 2 real roots
- D 4 real roots

Question 10.

What number is added to both sides of the equation $x^2 - 8x + 3 = 0$ to solve it by completing the square?

- A -16
- B 16
- C -64
- D 64

Bonus Question

Question 11

Determine if $x - 5$ is a factor of $2x^3 - 4x^2 - 7x - 10$. Explain your answer.