

Algebra Quick Quiz 01022020

Question 1.

The owner of a small computer repair business has one employee, who is paid an hourly rate of \$22. The owner estimates his weekly profit using the function $P(x) = 8600 - 22x$. In this function, x represents the number of

- (1) computers repaired per week
- (2) hours worked per week
- (3) customers served per week
- (4) days worked per week

Question 2

Which equation has the same solutions as $2x^2 + x - 3 = 0$?

- (1) $(2x - 1)(x + 3) = 0$
- (2) $(2x + 1)(x - 3) = 0$
- (3) $(2x - 3)(x + 1) = 0$
- (4) $(2x + 3)(x - 1) = 0$

Question 3.

Which table of values represents a linear relationship?

x	f(x)
-1	-3
0	-2
1	1
2	6
3	13

(1)

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

(3)

x	f(x)
-1	$\frac{1}{2}$
0	1
1	2
2	4
3	8

(2)

x	f(x)
-1	-1
0	0
1	1
2	8
3	27

(4)

Question 4.

Which domain would be the most appropriate set to use for a function that predicts the number of household online-devices in terms of the number of people in the household?

- (1) integers
- (2) whole numbers
- (3) irrational numbers
- (4) rational numbers

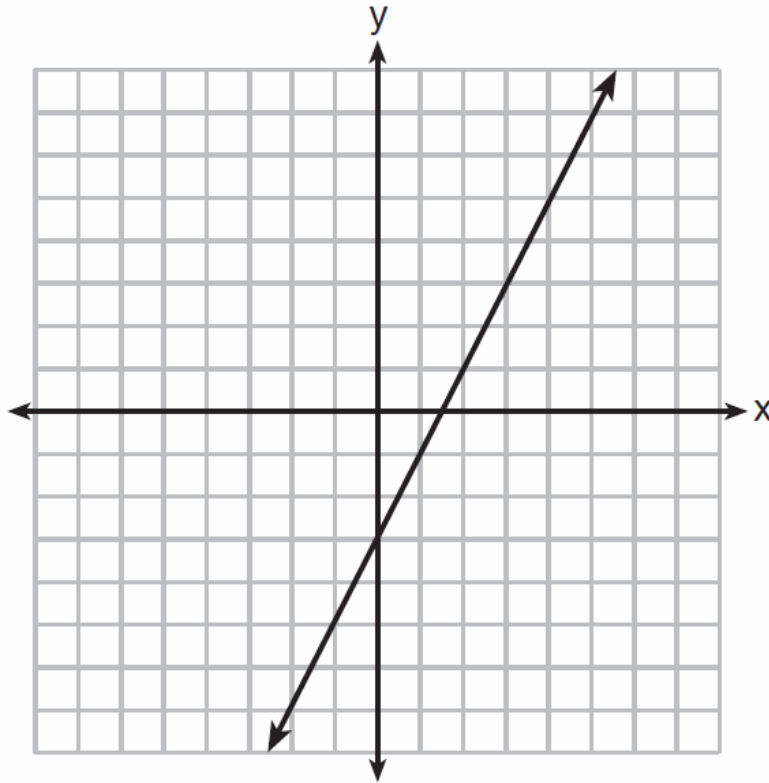
Question 5.

The inequality $7 - \frac{2}{3}x < x - 8$ is equivalent to

- (1) $x > 9$
- (2) $x > -\frac{3}{5}$
- (3) $x < 9$
- (4) $x < -\frac{3}{5}$

Question 6.

Which function has the same y -intercept as the graph below?



(1) $y = \frac{12 - 6x}{4}$

(2) $27 + 3y = 6x$

(3) $6y + x = 18$

(4) $y + 3 = 6x$

Question 7.

Fred is given a rectangular piece of paper. If the length of Fred's piece of paper is represented by $2x - 6$ and the width is represented by $3x - 5$, then the paper has a total area represented by

- (1) $5x - 11$ (3) $10x - 22$
(2) $6x^2 - 28x + 30$ (4) $6x^2 - 6x - 11$

Question 8.

The graph of a linear equation contains the points $(3,11)$ and $(-2,1)$. Which point also lies on the graph?

- (1) $(2,1)$ (3) $(2,6)$
(2) $(2,4)$ (4) $(2,9)$

Question 9.

How does the graph of $f(x) = 3(x - 2)^2 + 1$ compare to the graph of $g(x) = x^2$?

- (1) The graph of $f(x)$ is wider than the graph of $g(x)$, and its vertex is moved to the left 2 units and up 1 unit.
- (2) The graph of $f(x)$ is narrower than the graph of $g(x)$, and its vertex is moved to the right 2 units and up 1 unit.
- (3) The graph of $f(x)$ is narrower than the graph of $g(x)$, and its vertex is moved to the left 2 units and up 1 unit.
- (4) The graph of $f(x)$ is wider than the graph of $g(x)$, and its vertex is moved to the right 2 units and up 1 unit.

Question 10.

Connor wants to attend the town carnival. The price of admission to the carnival is \$4.50, and each ride costs an additional 79 cents. If he can spend at most \$16.00 at the carnival, which inequality can be used to solve for r , the number of rides Connor can go on, and what is the maximum number of rides he can go on?

- (1) $0.79 + 4.50r \leq 16.00$; 3 rides
- (2) $0.79 + 4.50r \leq 16.00$; 4 rides
- (3) $4.50 + 0.79r \leq 16.00$; 14 rides
- (4) $4.50 + 0.79r \leq 16.00$; 15 rides

Bonus Question

Question 11

Rewrite the expression $-3a(a + b - 5) + 4(-2a + 2b) + b(a + 3b - 7)$ to find the coefficients of each term. Enter the coefficients into the appropriate boxes.

$$\boxed{} a^2 + \boxed{} b^2 + \boxed{} ab + \boxed{} a + \boxed{} b$$