Algebra 1 Quick-Quiz-01022024

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 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 4.

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 5.

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

(1) $x > 9$

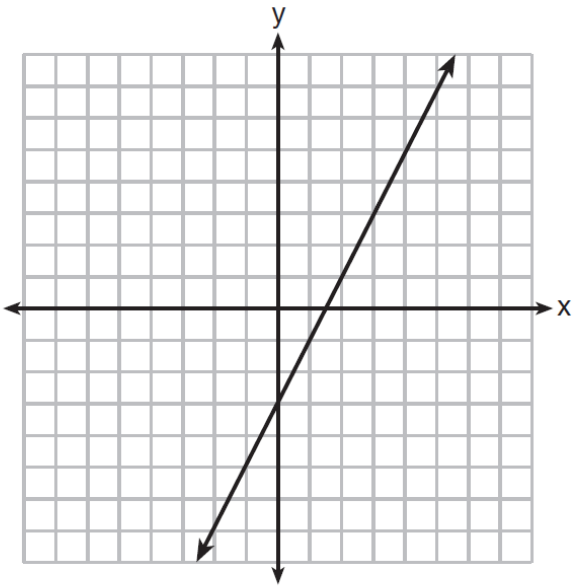
(2) $x > -\frac{3}{5}$

(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) $5x - 11$

(2) $6x^2 - 28x + 30$

(3) $10x - 22$

(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) $(2,1)$

(2) $(2,4)$

(3) $(2,6)$

(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 11a

A teacher is buying word games and board games for his students.

- Each word game can be played by up to 4 students.
- Each board game can be played by 2 students.
- The teacher needs enough games for 30 students to play at the same time.
- The maximum amount that the teacher can spend on the games is $200.

The number of word games (x) and the number of board games (y) the teacher buys must satisfy the system of linear inequalities below.

$$4x + 2y \geq 30$$

$$14.5x + 18y \leq 200$$

The teacher plans to buy 5 word games and 8 board games. Which statement about the number of games the teacher plans to buy is true?

A. There will be enough games for 30 students to play at the same time, but the total cost will be greater than the maximum amount.

B. There will be enough games for 30 students to play at the same time, and the total cost will be less than the maximum amount.

C. There will not be enough games for 30 students to play at the same time, and the total cost will be greater than the maximum amount.

D. There will not be enough games for 30 students to play at the same time, but the total cost will be less than the maximum amount.

Question 11b

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.

$\square\ a^2 + \square\ b^2 + \square\ ab + \square\ a + \square\ b$