Algebra Quick Quiz 01312022

Question 1.

Find $f(-4)$ when $f(x) = -x^2 - 2x$.

A 24 **B** 8
C -8 **D** -24
E none of the above

Use your graphing software to check your answer.

Question 2

Solve the equation $4x - 2(x - 4) = 1$.

A $x = \frac{5}{2}$ **B** $x = \frac{9}{2}$
C $x = -\frac{7}{2}$ **D** $x = -\frac{3}{2}$
E none of the above

Question 3.

Which is an algebraic expression for the nth number in the following pattern:

2, 4, 6, 8, ...

A $2n$ **B** 2^n
C $2n + 1$ **D** $2 + n$
E $2(n + 1)$

Question 4.

To rent a cabin for one night, a resort charges $50.00 plus an additional $10.00 per person. Which function models the total cost for x people to rent the cabin for one night?

A $C(x) = 50x$
B $C(x) = 10x$
C $C(x) = 50 + 10x$
D $C(x) = 10 + 50x$
E $C(x) = 60x$

Question 5.

Which function rule models the data in the table?

x	y
-1	-22
0	-15
1	-8

A $y = 7x - 15$
B $y = -7x - 15$
C $y = 7x + 15$
D $y = -7x + 15$
E none of the above

Question 6.

The graph of which function is **not** a line?

A $2x + 4y = 5$ **B** $y = 0.6x$
C $y = 2x^3$ **D** $y = 4$
E $y = 4x - (2x + 1) + 4$

Question 7.

Which of the following statements are **true** about the graph of $y = -2x^2 + 3x - 1$?

I. The parabola opens upward.
II. The parabola opens downward.
III. The graph of $y = \left(\frac{1}{2}\right)x^2$ is wider.
IV. The graph of $y = \left(\frac{1}{2}\right)x^2$ is narrower.

A II and III **B** I and IV
C I and III **D** II and IV
E None of the statements are true.

Question 8.

Given: $f(x) = \frac{2}{3}x - 4$ and $g(x) = \frac{1}{4}x + 1$

Four statements about this system are written below.

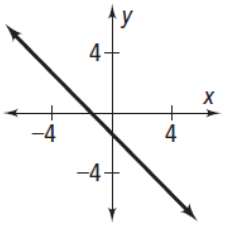
I. $f(4) = g(4)$
II. When $x = 12$, $f(x) = g(x)$.
III. The graphs of $f(x)$ and $g(x)$ intersect at (12,4).
IV. The graphs of $f(x)$ and $g(x)$ intersect at (4,12).

Which statement(s) are true?

(1) II, only (3) I and IV
(2) IV, only (4) II and III

Question 9.

Which equation is graphed below?



A $y = -2$
B $x = -2$
C $y = -x - 2$
D $x = y - 2$
E none of the above

Question 10.

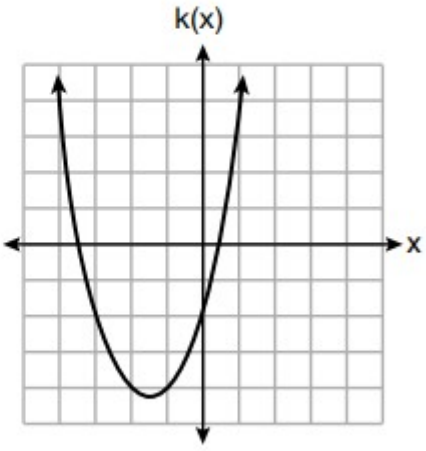
Which function has the *smallest* y-intercept?

$g(x) = 2x - 6$
(1)

$f(x) = \sqrt{x} - 2$
(3)

x	h(x)
−2	$\frac{1}{4}$
−1	$\frac{1}{2}$
0	1
1	2
2	4

(2)



(4)

Bonus Question

Question 11a

If $f(x) = 2x$ and $g(x) = x + 2$, what is $f(x) + g(x)$?

A $x + 2$
B $x + 4$
C $2x + 2$
D $3x + 2$
E $2x^2 + 2$

Question 11b

Which domain would be the most appropriate to use for a function that compares the number of emails sent (x) to the amount of data used for a cell phone plan (y)?

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