Algebra Quick Quiz 02222022

Question 1.

What is the solution of $\frac{k+4}{2} = \frac{k+9}{3}$?

(1) 1
(2) 5
(3) 6
(4) 14

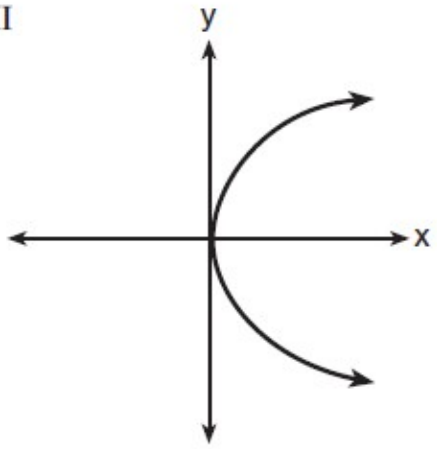
Question 2

Which representations are functions?

I

x	y
2	6
3	–12
4	7
5	5
2	–6

III



II $\{(1,1), (2,1), (3,2), (4,3), (5,5), (6,8), (7,13)\}$

IV $y = 2x + 1$

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

Question 3.

If $f(x) = \frac{\sqrt{2x+3}}{6x-5}$, then $f\left(\frac{1}{2}\right) =$

(1) 1

(2) -2

(3) -1

(4) $-\frac{13}{3}$

Question 4.

The New York Volleyball Association invited 64 teams to compete in a tournament. After each round, half of the teams were eliminated. Which equation represents the number of teams, t, that remained in the tournament after r rounds?

(1) $t = 64(r)^{0.5}$

(2) $t = 64(-0.5)^r$

(3) $t = 64(1.5)^r$

(4) $t = 64(0.5)^r$

Question 5.

What is an equation of the line that passes through the points (3,–3) and (–3,–3)?

(1) $y = 3$

(2) $x = -3$

(3) $y = -3$

(4) $x = y$

Question 6.

A typical cell phone plan has a fixed base fee that includes a certain amount of data and an overage charge for data use beyond the plan. A cell phone plan charges a base fee of \$62 and an overage charge of \$30 per gigabyte of data that exceed 2 gigabytes. If C represents the cost and g represents the total number of gigabytes of data, which equation could represent this plan when more than 2 gigabytes are used?

(1) $C = 30 + 62(2 - g)$
(2) $C = 30 + 62(g - 2)$
(3) $C = 62 + 30(2 - g)$
(4) $C = 62 + 30(g - 2)$

Question 7.

If the formula for the perimeter of a rectangle is $P = 2l + 2w$, then w can be expressed as

(1) $w = \frac{2l - P}{2}$
(2) $w = \frac{P - 2l}{2}$
(3) $w = \frac{P - l}{2}$
(4) $w = \frac{P - 2w}{2l}$

Question 8. Use your graphing software to if you need to.

Which ordered pair is a solution of the system of equations $y = x^2 - x - 20$ and $y = 3x - 15$?

(1) (–5,–30)
(2) (–1,–18)
(3) (0,5)
(4) (5,–1)

Question 9.

Which equation represents a line that is parallel to the line $y = 3 - 2x$?

(1) $4x + 2y = 5$

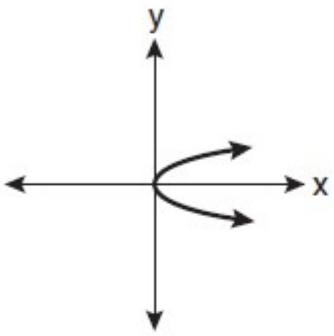
(2) $2x + 4y = 1$

(3) $y = 3 - 4x$

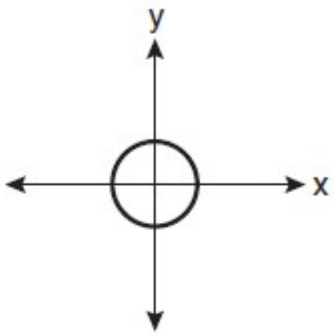
(4) $y = 4x - 2$

Question 10.

Which graph represents a function?



(1)



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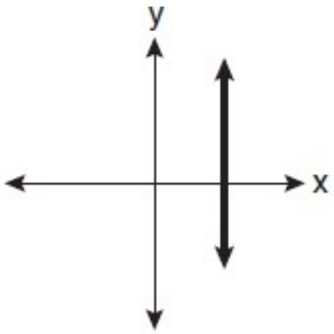

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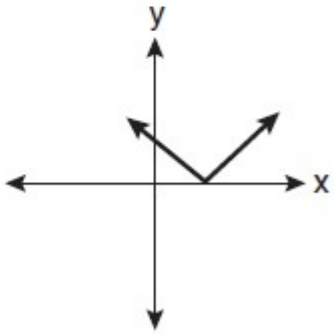

(4)

Bonus Question

Question 11a.

The formula for the area of a trapezoid is $A = \frac{1}{2}h(b_1 + b_2)$. Solve this formula for b_1.

A $b_1 = \frac{A}{2h} + b_2$

B $b_1 = \frac{A}{2h} - b_2$

C $b_1 = \frac{2A}{h} + b_2$

D $b_1 = \frac{2A}{h} - b_2$

Question 11b.

Solve the following system of equations algebraically:

$$3x + 2y = 4$$
$$4x + 3y = 7$$

[Only an algebraic solution can receive full credit.]