Algebra Quick Quiz 02162022

Question 1.

What is the product of $-3x^2y$ and $(5xy^2 + xy)$?

(1) $-15x^3y^3 - 3x^3y^2$

(2) $-15x^3y^3 - 3x^3y$

(3) $-15x^2y^2 - 3x^2y$

(4) $-15x^3y^3 + xy$

Question 2

Look at the equation below.

$6 - 2y = 2(3 - y)$

Which of these properties is shown by the equation?

A identity property
B associative property
C distributive property
D commutative property
E transitive property

Question 3.

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

(1) $(-2,-2)$

(2) $(-1,1)$

(3) $(0,0)$

(4) $(2,2)$

Question 4.

The statement "A number multiplied by itself is the number added to itself" is represented by which of these equations?

A $n = 2n$
B $n = n + 1$
C $n^2 = 2n$
D $2n = n + 1$
E none of the above

Question 5.

Using a graphing calculator or coordinate grids, do the graphs of $f(x) = x + 2$ and $g(x) = x^2 - 2x - 4$ intersect?

A No, they do not intersect.
B Yes, they intersect at one point.
C Yes, they intersect at two points.
D Yes, they intersect at three points.
E Not enough information is given to determine whether the graphs intersect.

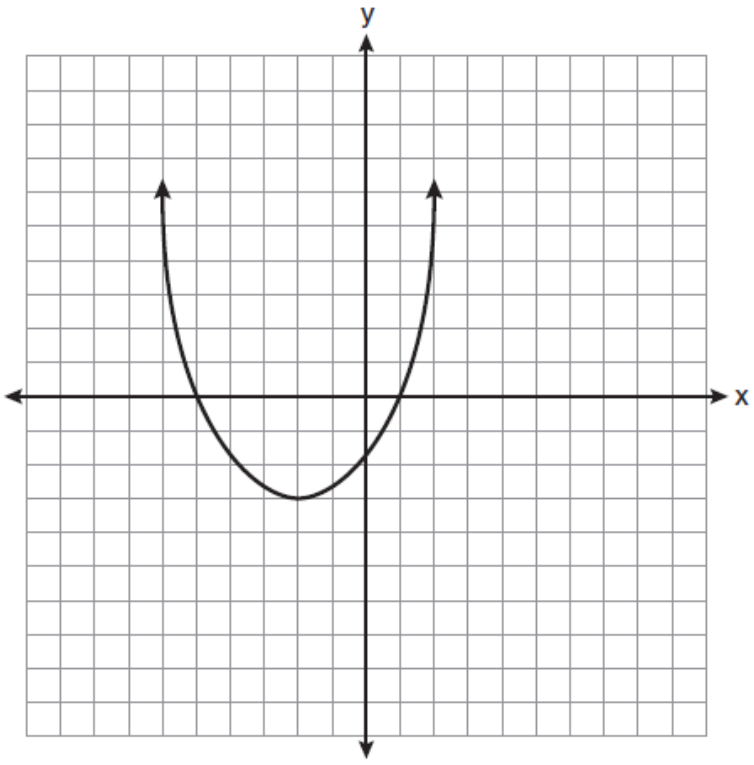
Question 6.

When $3x + 2 \leq 5(x - 4)$ is solved for x, the solution is

(1) $x \leq 3$
(2) $x \geq 3$
(3) $x \leq -11$
(4) $x \geq 11$

Question 7.

What are the vertex and the axis of symmetry of the parabola shown in the diagram below?



(1) The vertex is (–2,–3), and the axis of symmetry is $x = -2$.

(2) The vertex is (–2,–3), and the axis of symmetry is $y = -2$.

(3) The vertex is (–3,–2), and the axis of symmetry is $y = -2$.

(4) The vertex is (–3,–2), and the axis of symmetry is $x = -2$.

Question 8.

The tables below show the values of four different functions for given values of x.

x	f(x)
1	12
2	19
3	26
4	33

x	g(x)
1	–1
2	1
3	5
4	13

x	h(x)
1	9
2	12
3	17
4	24

x	k(x)
1	–2
2	4
3	14
4	28

Which table represents a linear function?

(1) $f(x)$
(2) $g(x)$
(3) $h(x)$
(4) $k(x)$

Question 9.

The range of the function $f(x) = x^2 + 2x - 8$ is all real numbers

(1) less than or equal to -9
(2) greater than or equal to -9
(3) less than or equal to -1
(4) greater than or equal to -1

Question 10.

Pam is playing with red and black marbles. The number of red marbles she has is three more than twice the number of black marbles she has. She has 42 marbles in all. How many red marbles does Pam have?

(1) 13
(2) 15
(3) 29
(4) 33

Bonus Question

Question 11a.

Which equation represents a line that is parallel to the line $y = -4x + 5$?

(1) $y = -4x + 3$
(2) $y = -\frac{1}{4}x + 5$
(3) $y = \frac{1}{4}x + 3$
(4) $y = 4x + 5$

Question 11b.

What is half of 2^6?

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