Algebra 1 Quick Quiz 11142023

Question 1.

What are the zeros of $f(x) = (x + 5)(x - 4)$?

A 4 and 5
B -4 and 5
C 4 and -5
D -4 and -5
E none of the above

Use your graphing calculator only when you are finished and wish to check your answer.

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.

What is the vertex of the parabola $y = (x + 3)^2 + 1$?

A $(-3, -1)$
B $(-3, 1)$
C $(-1, -3)$
D $(-1, 3)$
E none of the above

Use your graphing calculator only when you are finished and wish to check your answer.

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.

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 7.

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 8.

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

Use your graphing calculator only when you are finished and wish to check your answer.

Question 9.

The zeros of the function $f(x) = x^2 - 5x - 6$ are

(1) -1 and 6

(2) 1 and -6

(3) 2 and -3

(4) -2 and 3

Use your graphing calculator only when you are finished and wish to check your answer.

Question 10. Use your graphing software to check your answer.

Which equation and ordered pair represent the correct vertex form and vertex for $j(x) = x^2 - 12x + 7$?

(1) $j(x) = (x - 6)^2 + 43, \quad (6,43)$

(2) $j(x) = (x - 6)^2 + 43, \quad (-6,43)$

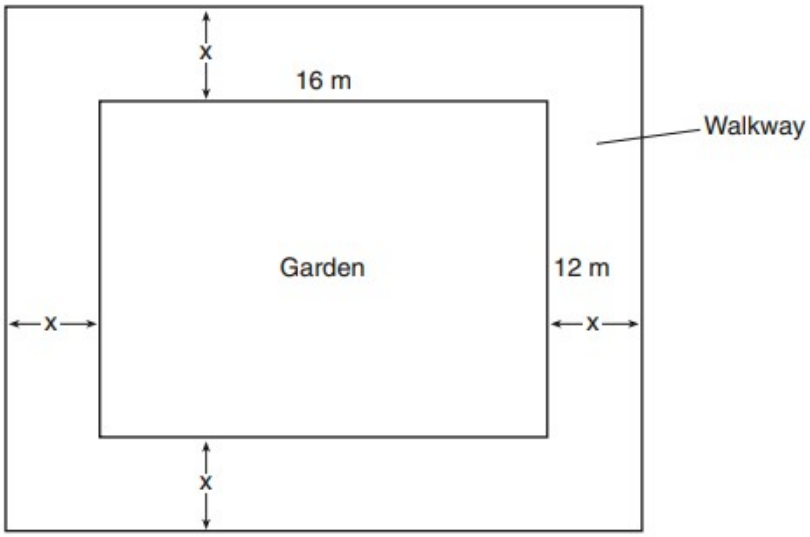
(3) $j(x) = (x - 6)^2 - 29, \quad (6,-29)$

(4) $j(x) = (x - 6)^2 - 29, \quad (-6,-29)$

Bonus Question

Question 11

A rectangular garden measuring 12 meters by 16 meters is to have a walkway installed around it with a width of x meters, as shown in the diagram below. Together, the walkway and the garden have an area of 396 square meters.



Write an equation that can be used to find x, the width of the walkway.

Describe how your equation models the situation.

Determine and state the width of the walkway, in meters.