Algebra Quick-Quiz-03012022

Question 1.

If $f(x) = x^2 - 2x - 8$ and $g(x) = \frac{1}{4}x - 1$, for which values of x is $f(x) = g(x)$?

(1) -1.75 and -1.438
(2) -1.75 and 4
(3) -1.438 and 0
(4) 4 and 0

Question 2

What is the value of the y-coordinate of the solution to the system of equations $x + 2y = 9$ and $x - y = 3$?

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

Question 3.

The set $\{11,12\}$ is equivalent to

(1) $\{x|11 < x < 12$, where x is an integer$\}$
(2) $\{x|11 < x \leq 12$, where x is an integer$\}$
(3) $\{x|10 \leq x < 12$, where x is an integer$\}$
(4) $\{x|10 < x \leq 12$, where x is an integer$\}$

Question 4.

A ball was thrown upward in the air. The height, in feet, of the ball above the ground t seconds after being thrown can be determined by the expression $-16t^2 + 40t + 3$. What is the meaning of 3 in the expression? Select the correct answer.

A. The ball takes 3 seconds to reach its maximum height.

B. The ball takes 3 seconds to reach the ground.

C. The ball was thrown from a height of 3 feet.

D. The ball reaches a maximum height of 3 feet.

Question 5.

A local theater sells admission tickets for \$9.00 on Thursday nights. At capacity, the theater holds 100 customers. The function $M(n) = 9n$ represents the amount of money the theater takes in on Thursday nights, where n is the number of customers. What is the domain of $M(n)$ in this context? Select the correct answer.

A. all whole numbers

B. all non-negative rational numbers

C. all non-negative integers that are multiples of 9

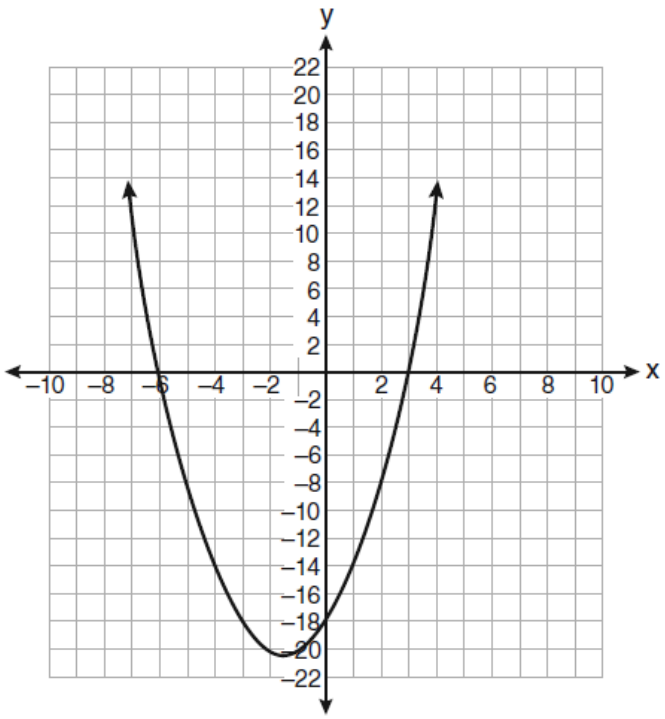
D. all non-negative integers less than or equal to 100

Question 6.

Factor completely: $4x^3 - 36x$

Question 7.

The equation $y = x^2 + 3x - 18$ is graphed on the set of axes below.



Based on this graph, what are the roots of the equation $x^2 + 3x - 18 = 0$?

(1) −3 and 6

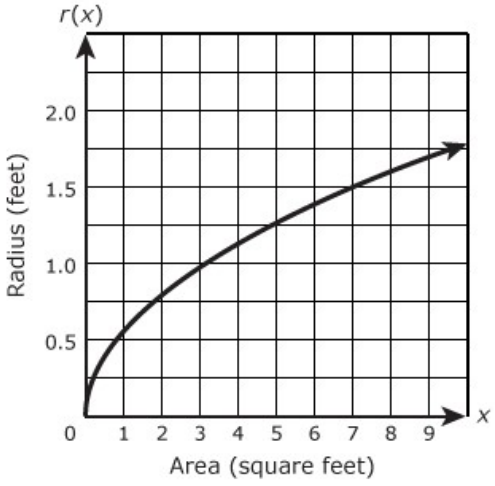
(2) 0 and −18

(3) 3 and −6

(4) 3 and −18

Question 8.

The function $r(x)$ represents the radius of a circle for a given area x. A graph of the function is shown in the figure.



According to the graph what is the approximate average rate of change in the radius of the circle as the area increases from 3 square feet to 7 square feet?

A. 0.125 foot per square foot

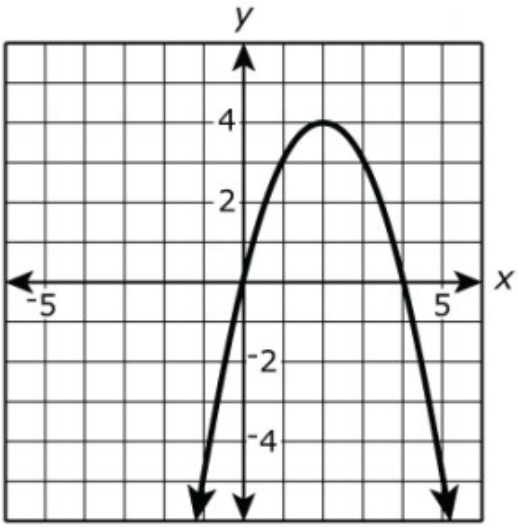
B. 0.25 foot per square foot

C. 0.5 foot per square foot

D. 8 feet per square foot

Question 9.

19. The function $f(x) = 4x - x^2$ is graphed as shown.



Part A

Drag the correct word to the box with each given interval to indicate whether the function is increasing or decreasing on that interval.

(Note: The boxes "Increasing" and "Decreasing" can be selected multiple times.)

Increasing	Decreasing

$x < 0$	$0 < x < 2$	$2 < x < 4$	$x > 4$

For each of the 4 sections directly above, call them **A, B, C and D**, state whether the function is **Increasing** or **Decreasing.**

Question 10.

If h represents a number, which equation is a correct translation of "Sixty more than 9 times a number is 375"?

(1) $9h = 375$

(2) $9h + 60 = 375$

(3) $9h - 60 = 375$

(4) $60h + 9 = 375$

Bonus Question

Question 11a.

Which expression is equivalent to $9x^2 - 16$?

(1) $(3x + 4)(3x - 4)$

(2) $(3x - 4)(3x - 4)$

(3) $(3x + 8)(3x - 8)$

(4) $(3x - 8)(3x - 8)$

Question 11b.

Which expression represents $(3x^2y^4)(4xy^2)$ in simplest form?

(1) $12x^2y^8$

(2) $12x^2y^6$

(3) $12x^3y^8$

(4) $12x^3y^6$