

## Algebra 1 Quick-Quiz-12032024

### Question 1.

Bryan's hockey team is purchasing jerseys. The company charges \$250 for a onetime set-up fee and \$23 for each printed jersey. Which expression represents the total cost of  $x$  number of jerseys for the team?

(1)  $23x$

(3)  $23x + 250$

(2)  $23 + 250x$

(4)  $23(x + 250)$

### Question 2

Which table represents a function?

x	y
2	-3
3	0
4	-3
2	1

(1)

x	y
-3	0
-2	1
-3	2
2	3

(3)

x	y
1	2
1	3
1	4
1	5

(2)

x	y
-2	-4
0	2
2	4
4	6

(4)

### Question 3.

Which expression is equivalent to  $2(x^2 - 1) + 3x(x - 4)$ ?

(1)  $5x^2 - 5$

(3)  $5x^2 - 12x - 1$

(2)  $5x^2 - 6$

(4)  $5x^2 - 12x - 2$

### Question 4

The value of  $x$  that satisfies the equation  $\frac{4}{3} = \frac{x + 10}{15}$  is

(1)  $-6$

(3)  $10$

(2)  $5$

(4)  $30$

### Question 5.

Josh graphed the function  $f(x) = -3(x - 1)^2 + 2$ . He then graphed the function  $g(x) = -3(x - 1)^2 - 5$  on the same coordinate plane. The vertex of  $g(x)$  is

(1) 7 units below the vertex of  $f(x)$

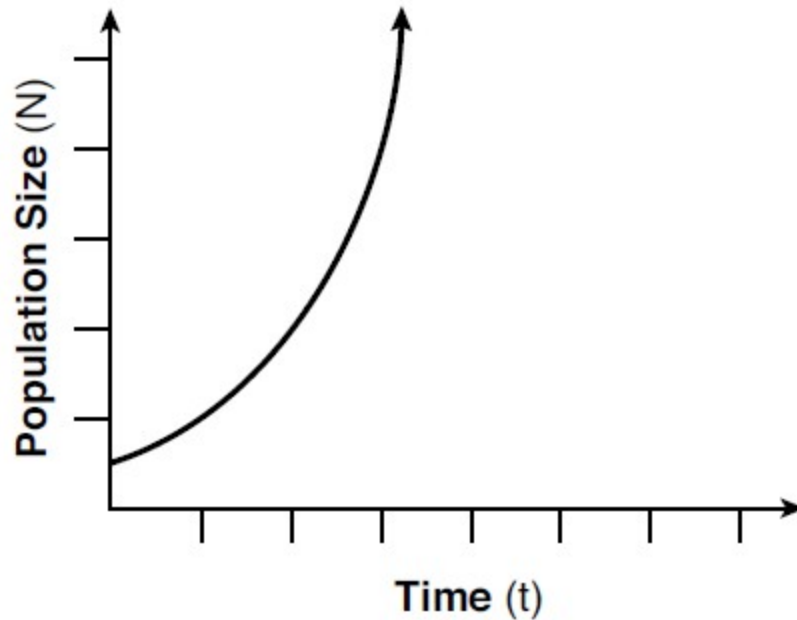
(2) 7 units above the vertex of  $f(x)$

(3) 7 units to the right of the vertex of  $f(x)$

(4) 7 units to the left of the vertex of  $f(x)$

Question 6.

Which type of function is shown in the graph below?



(1) linear

(3) square root

(2) exponential

(4) absolute value

Question 7.

The expression  $16x^2 - 81$  is equivalent to

(1)  $(8x - 9)(8x + 9)$

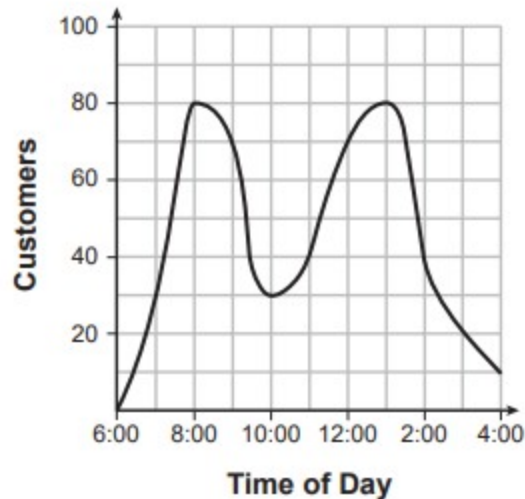
(3)  $(4x - 9)(4x + 9)$

(2)  $(8x - 9)(8x - 9)$

(4)  $(4x - 9)(4x - 9)$

### Question 8.

A café owner tracks the number of customers during business hours. The graph below models the data.



Based on the graph, the café owner saw a continual

- (1) increase in customers from 6:00 to 11:00
- (2) increase in customers from 12:00 to 3:00
- (3) decrease in customers from 1:00 to 4:00
- (4) decrease in customers from 11:00 to 2:00

### Question 9.

A ball is thrown into the air from the top of a building. The height,  $h(t)$ , of the ball above the ground  $t$  seconds after it is thrown can be modeled by  $h(t) = -16t^2 + 64t + 80$ . How many seconds after being thrown will the ball hit the ground?

- (1) 5
- (2) 2
- (3) 80
- (4) 144

Question 10.

Which equation is equivalent to  $y = x^2 + 24x - 18$ ?

(1)  $y = (x + 12)^2 - 162$

(3)  $y = (x - 12)^2 - 162$

(2)  $y = (x + 12)^2 + 126$

(4)  $y = (x - 12)^2 + 126$

Bonus

Question 11a.

Which expression is equivalent to  $36x^2 - 100$ ?

(1)  $4(3x - 5)(3x - 5)$

(3)  $2(9x - 25)(9x - 25)$

(2)  $4(3x + 5)(3x - 5)$

(4)  $2(9x + 25)(9x - 25)$

Question 11b.

Solve  $x^2 - 9x = 36$  algebraically for all values of  $x$ .