

Algebra Quick Quiz 02142020

Question 1

A guitar manufacturer uses a computer-controlled machine to make electric guitars. The table below shows the total number of guitars made after 2, 4, 8, and 16 hours.

Hours (h)	Total Number of Guitars Made (g)
2	18
4	42
8	90
16	186

If g represents the total number of guitars made after h hours, which equation represents the pattern shown in the table?

- A. $g = 12h - 6$
- B. $g = 12h$
- C. $g = 3h^2 - 6$
- D. $g = 3h^2 + 6$

Question 2

- What is the range of the function $f(x) = x^2 + 3$ if the domain is $\{-3, 0, 3\}$?
- A. $\{3, 12\}$
 - B. $\{-6, 3, 12\}$
 - C. all real numbers
 - D. all real numbers greater than or equal to 3

Question 3.

The sum of three consecutive odd integers is 21. If x is the least of these odd integers, which equation **must** be true?

- A. $3x = 21$
- B. $3x + 3 = 21$
- C. $3x + 4 = 21$
- D. $3x + 6 = 21$

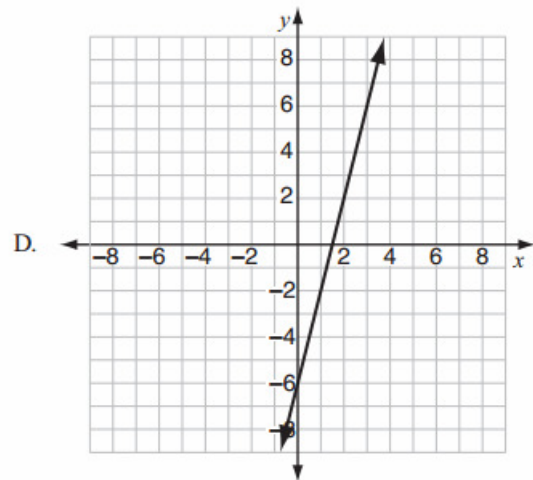
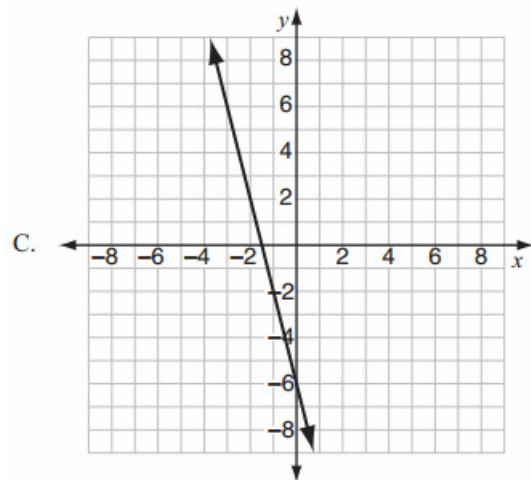
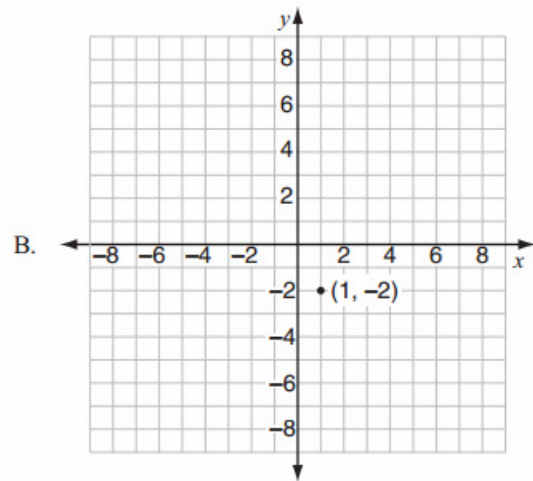
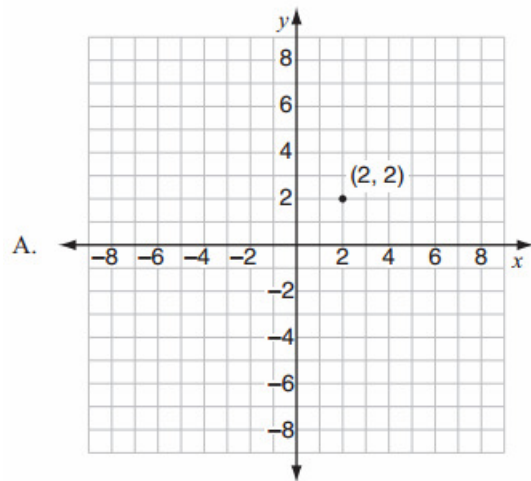
Question 4.

Look at this system of equations.

$$2y + 12 = 8x$$

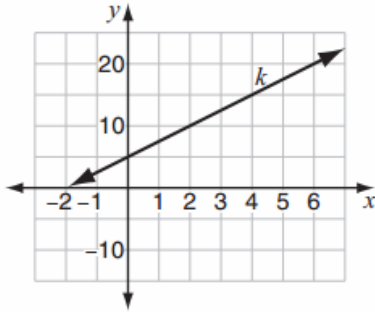
$$12x - 3y = 18$$

Which graph shows the solution set of the system of equations?



Question 5.

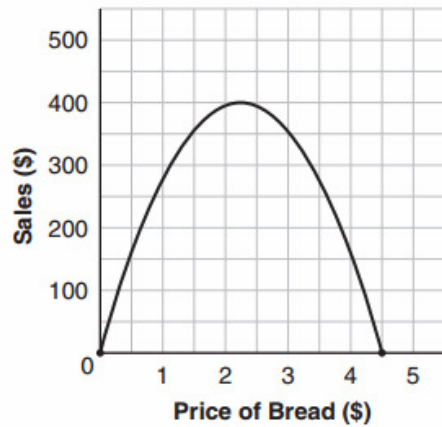
Look at this graph.



What is the slope of line k ?

Question 6.

This parabola shows the relationship between the amount of money a baker earns from bread sales each day and the price the baker charges for each loaf of bread.



Based on the parabola, what price should the baker charge for each loaf of bread to earn the greatest amount of money from bread sales each day?

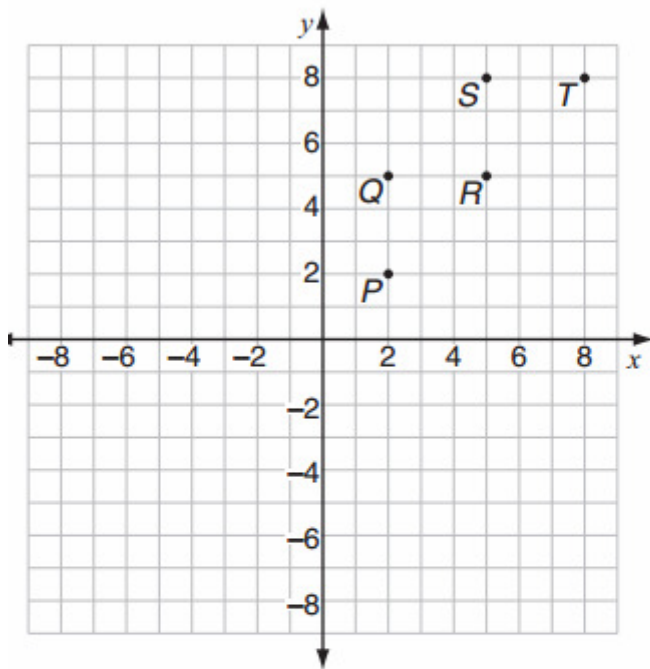
Question 7.

Which expression is equivalent to $2x(x^2 + 9) - 2x$?

- A. $x^2 + 9$
- B. $2x^3 + 16x$
- C. $3x^2 - 2x + 9$
- D. $2x^3 - 2x + 9$

Question 8.

Look at this graph of a relation.



Which two points could be removed to make this relation a function?

- A. points P and Q
- B. points Q and R
- C. points Q and T
- D. points R and S

Question 9.

This list shows the first four terms of a geometric sequence.

$$4, 2, 1, \frac{1}{2}, \dots$$

Which function can be used to determine the n th term of this sequence?

A. $f(n) = 4 - 2^n$

B. $f(n) = 4 - 2^{n-1}$

C. $f(n) = 4\left(\frac{1}{2}\right)^n$

D. $f(n) = 4\left(\frac{1}{2}\right)^{n-1}$

Question 10.

Look at this expression.

$$| -49 + 5x^3 |$$

What is the value of the expression when $x = -2$?

- A. 9
- B. 19
- C. 79
- D. 89

Bonus Question

Question 11

A coach will order baseball caps from one of two companies.

- Creative Caps charges a one-time fee of \$50, plus \$5 per baseball cap.
 - Happy Hats charges a one-time fee of \$30, plus \$6 per baseball cap.
- a. How much does Creative Caps charge for an order of 15 baseball caps?

 - b. Write an algebraic expression to represent the amount that Creative Caps charges for an order of x baseball caps.

 - c. The coach wants to buy baseball caps from the least expensive company. In terms of the number of baseball caps, when should the coach order the baseball caps from Creative Caps? Show your work or explain how you know.