Algebra Quick Quiz 02102020

Question 1

This month Doris is scheduled to work 5 fewer hours than twice the number of hours she worked last month. Last month Doris worked h hours. Which expression represents the number of hours Doris is scheduled to work this month?

A. $2h - 5$
B. $5 - 2h$
C. $2(h - 5)$
D. $2(5 - h)$

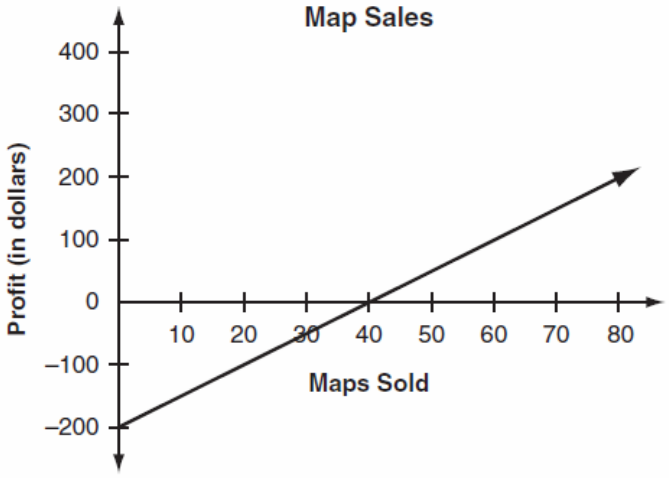
Question 2

Which expression is equivalent to $(6x^2 - 9x) - (2x - 3)$?

A. $(3x - 1)(2x - 3)$
B. $(3x + 1)(x - 4)$
C. $(4x - 1)(x - 2)$
D. $(6x + 1)(x - 3)$

Question 3.

Brian started a business selling maps of hiking trails. His initial expense was $200. The graph below shows Brian's profit from selling different numbers of maps. [profit = revenue – expense]



What does the ***x*-intercept** of the graph represent?

A. the amount of revenue before any maps were sold
B. the amount of revenue when all the maps were sold
C. the number of maps sold when the revenue was equal to the expense
D. the number of maps sold when the revenue was greater than the expense

Question 4.

Look at the inequality below.

$$0 < b^c < \left(\frac{1}{2}\right)^0$$

Write a value for b and a value for c that will make the inequality true. Write your answer in the form b^c.

Question 5.

Look at this expression.

$$\frac{x^7 y^{-5}}{x^3 y}$$

Simplify the expression so that each variable is written once and all exponents are positive.

Question 6.

Look at the equation below.

$$|x + 6| = 4$$

For what values of x is the equation true? Show your work or explain how you know.

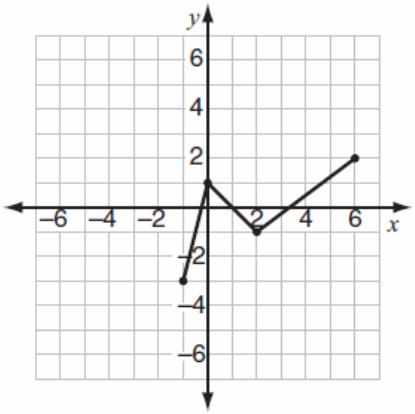
Question 7.

Bert graphs a function.

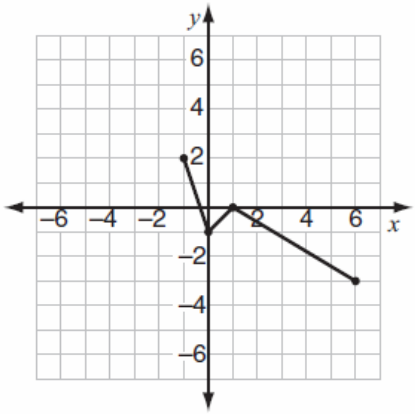
- The domain of the function is $-3 \leq x \leq 2$.
- The range of the function is $-1 \leq y \leq 6$.
- The y-intercept of the function is 1.

Which graph could represent Bert's function?

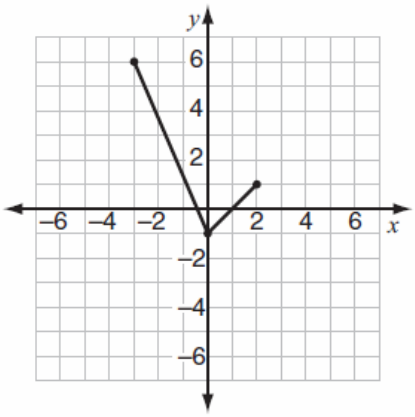
A.



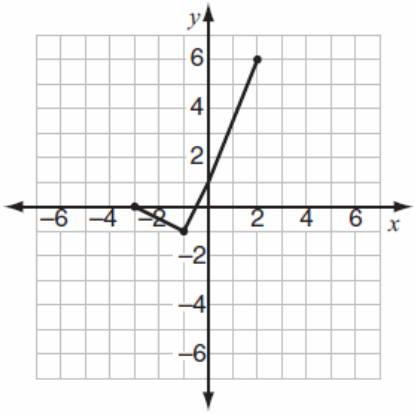
B.



C.



D.



Question 8.

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 9.

If x is an integer, which expression must be divisible by 3?

A. $3x + 1$

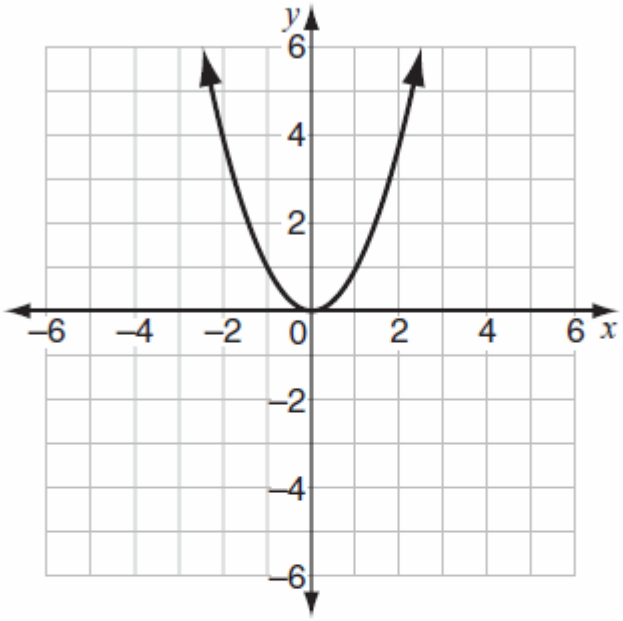
B. $4x - 1$

C. $8x + 6$

D. $12x - 9$

Question 10.

Look at this graph of $y = x^2$.



If $y = x - 2$ is graphed on the same coordinate plane, at how many points would the two graphs intersect?

A. 0

B. 1

C. 2

D. 3

Bonus Question

Question 11

At the beginning of an experiment, the number of bacteria in a colony was counted at time $t = 0$. The number of bacteria in the colony t minutes after the initial count is modeled by the function $b(t) = 4(2)^t$. Which value and unit represent the average rate of change in the number of bacteria for the first 5 minutes of the experiment?

Select **all** that apply.

A. 24.0

B. 24.8

C. 25.4

D. 25.6

E. bacteria

F. minutes

G. bacteria per minute

H. minutes per bacteria