Algebra Quick-Quiz-03292022

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.

If $f(x) = 2(3^x) + 1$, what is the value of $f(2)$?

(1) 13
(2) 19
(3) 37
(4) 54

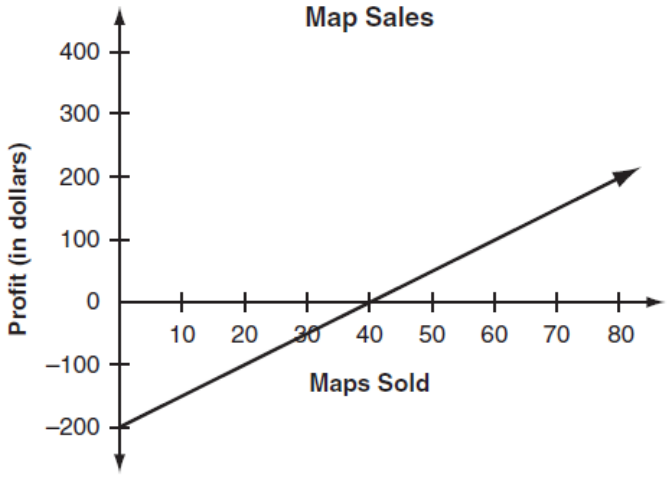
Question 4.

A high school sponsored a badminton tournament. After each round, one-half of the players were eliminated. If there were 64 players at the start of the tournament, which equation models the number of players left after 3 rounds?

(1) $y = 64(1 - .5)^3$
(2) $y = 64(1 + .5)^3$
(3) $y = 64(1 - .3)^{0.5}$
(4) $y = 64(1 + .3)^{0.5}$

Question 5.

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 6.

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 7.

Given $7x + 2 \geq 58$, which number is *not* in the solution set?

(1) 6
(2) 8
(3) 10
(4) 12

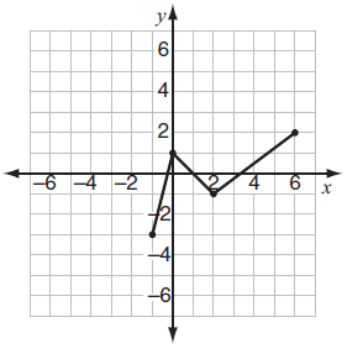
Question 8.

Bert graphs a function.

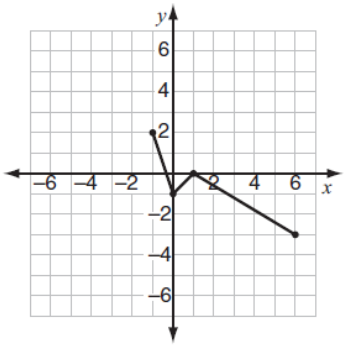
- The domain of the function is $-3 \leq x \leq 2$.
- The range of the function is $-1 \leq y \leq 6$.
- The y-intercept of the function is 1.

Which graph could represent Bert's function?

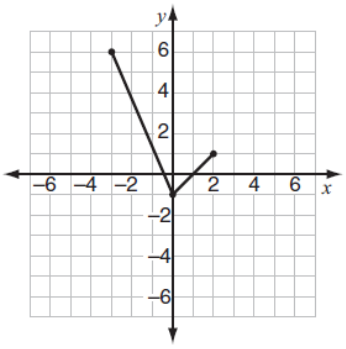
A.



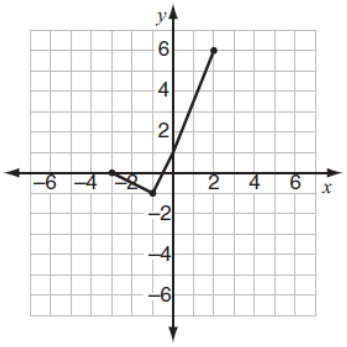
B.



C.



D.



Question 9.

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 10.

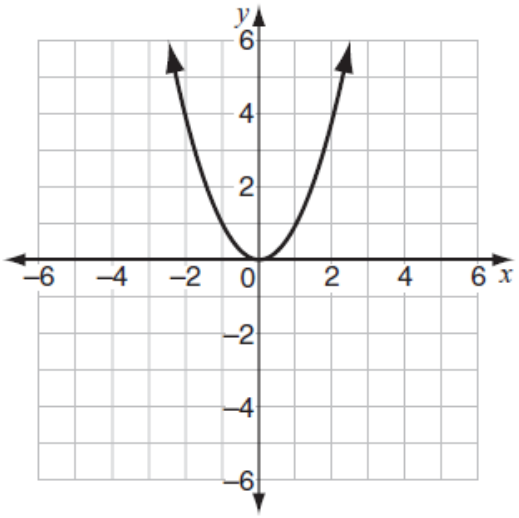
Which value of x makes $\frac{x-3}{4}+\frac{2}{3}=\frac{17}{12}$ true?

(1) 8
(2) 6
(3) 0
(4) 4

Bonus Question

Question 11a

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

Question 11b.

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