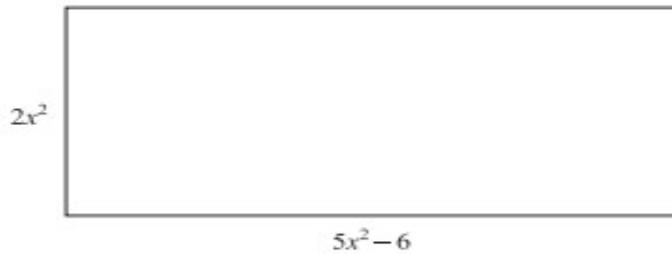Algebra 1 Quick-Quiz-02272024

Question 1

What is the perimeter of the rectangle below?

$2x^2$

$5x^2 - 6$

A. $14x^2 - 12$
B. $14x^8 - 12$
C. $4x^2 - 12$
D. $4x^2 - 2$

Question 2

Cally's Candle Shop uses the equation below to determine how much to charge for candles.

Cost $= 2t^2 - 7t + 5$, where t is the burning time, in hours.

Which expression completely factors the cost equation?

A. $(2t^2 - 1)(t - 5)$
B. $(2t + 1)(t - 5)$
C. $(2t - 5)(t - 1)$
D. $(2t + 5)(t + 1)$

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]

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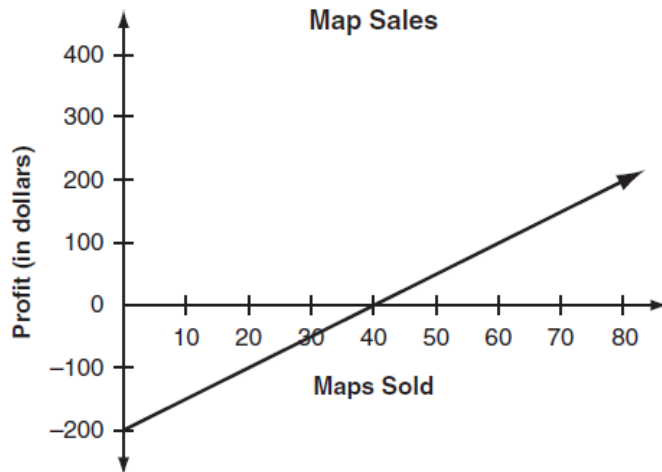
What does the *x*-intercept of the graph represent?

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
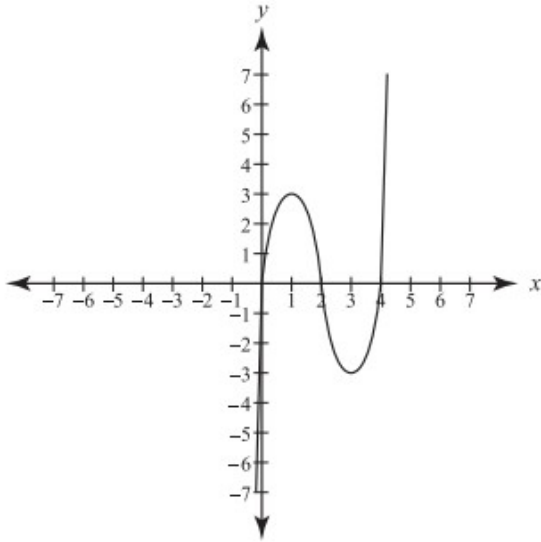D. the number of maps sold when the revenue was greater than the expense

Question 4.

What is the sum of the two polynomials below?

$$-3x^2 + 7xy - 6y^2$$
$$5xy + 3y^2 - 4x^2$$

A. $7x^2 - 12xy + 3y^2$
B. $-7x^2 + 12xy - 3y^2$
C. $-7x^4 + 12x^2y^2 - 3y^4$
D. $2x^3y^2 + 10xy^3 - 10x^2y^2$

Question 5.

A manufacturer needs to know the zeroes of
the graph below in order to provide the
appropriate mixture of compounds in a
solution.

What are all the zeroes of the graph?

A.   (0, 0)
B.   (0, 0) and (0, 4)
C.   (0, 0), (2, 0), and (4, 0)
D.   (0, 0), (0, 2), and (0, 4)

Question 6.

The general admission price at the movie
theater is $6.50. Children 12 years old and
under, and adults who are at least 65, are
charged only half price. Which number line
represents the ages of people eligible for half-
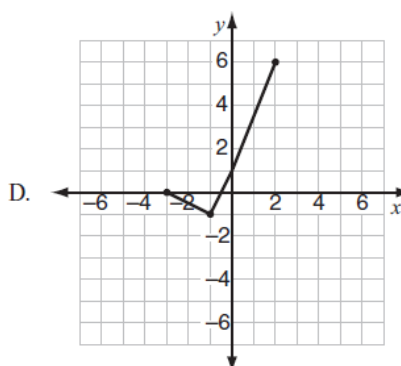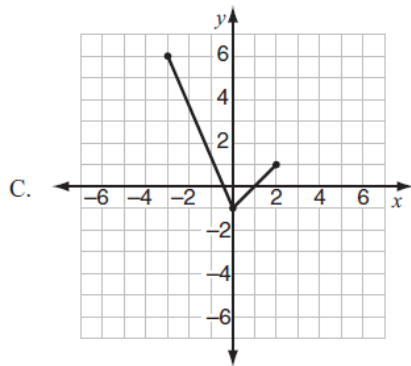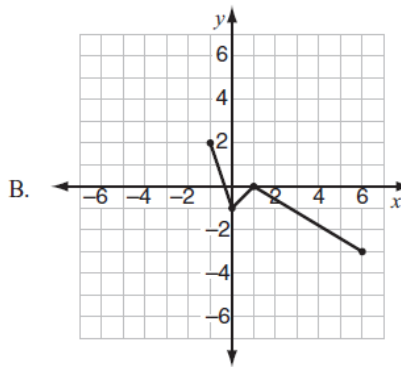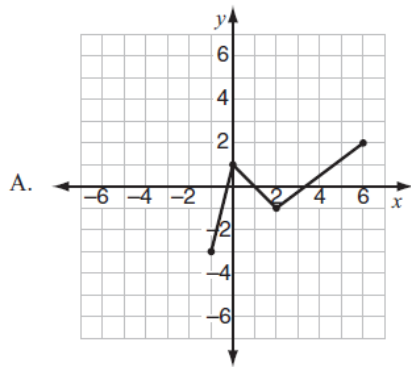price admission?

A.

B.

C.

D.

Question 7.

Bert graphs a function.

- The domain of the function is $-3 \le x \le 2$.
- The range of the function is $-1 \le y \le 6$.
- 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. $x^2 + 9$
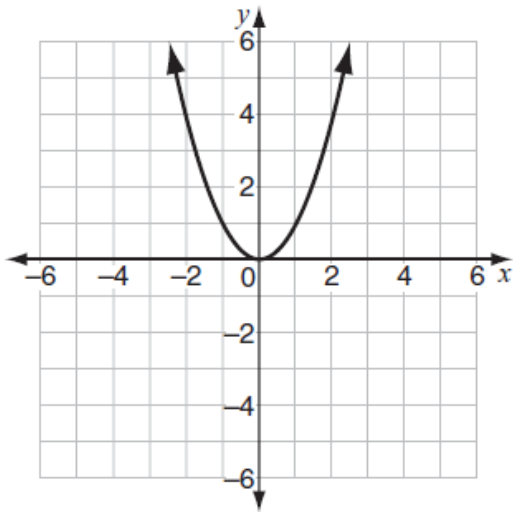B. $2x^3 + 16x$
C. $3x^2 - 2x + 9$
D. $2x^3 - 2x + 9$

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