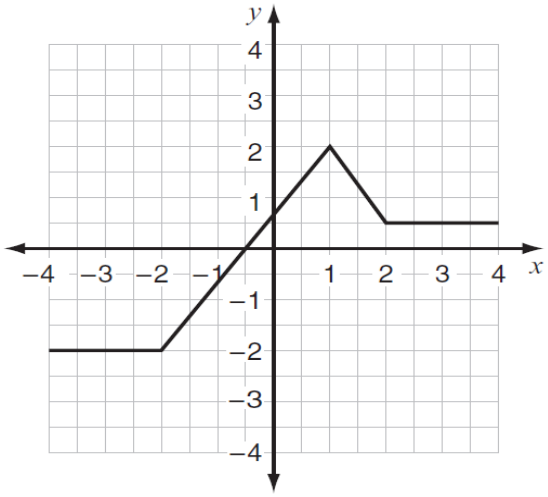
Algebra 1 Quick-Quiz-02222024

Question 1

Look at this graph of a function.



For which values of x does the function have a rate of change that is less than zero?

A. between –4 and –2
B. between –2 and 1
C. between 1 and 2
D. between 2 and 4

Question 2

The total daily sales at a video store are shown in the expression below, where x is the number of tapes sold.

$$21x - 3x^2$$

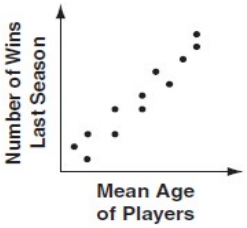
Which shows this expression completely factored?

A. $3x(7 - x)$
B. $3x^2(7 - x)$
C. $x(21 - 3x)$
D. $(x - 3)(7 - x)$

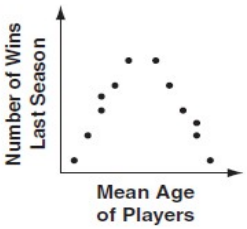
Question 3.

Which graph shows a strong negative correlation between the mean age of the players on professional basketball teams and the number of wins last season?

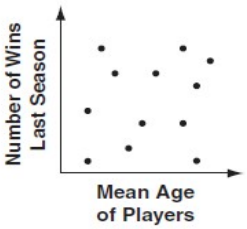
A.



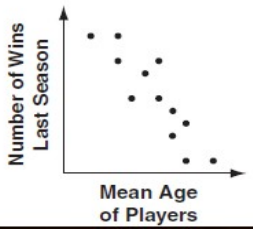
B.



C.



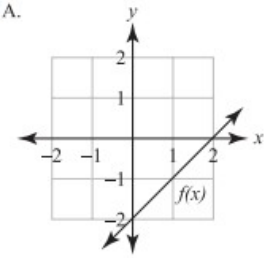
D.



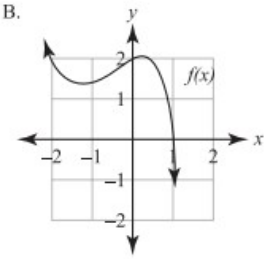
Question 4.

Which graph of a function $f(x)$ has a zero at $x = 2$?

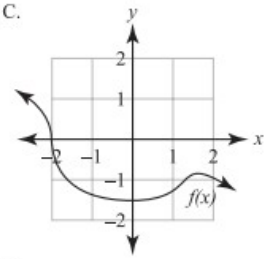
A.



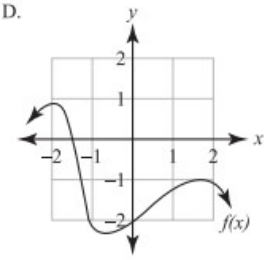
B.



C.



D.



Question 5.

When graphed, which equation would result in a parabola that opens downward?

A. $y = 4x^2$

B. $y = 4x^3$

C. $y = -4x^2$

D. $y = -4|x|$

Question 6.

The formula for finding the perimeter of a rectangle is $P = 2l + 2w$. Which equation solves for w in terms of l and P?

A. $w = \frac{P}{2l}$

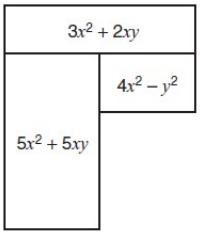
B. $w = \frac{P+2l}{2}$

C. $w = \frac{P-2l}{2}$

D. $w = 2(P - 2l)$

Question 7.

The expression inside each of these rectangles represents the area, in square units, of the rectangle.



a. Write an algebraic expression in simplified form to represent the sum of the areas of all the rectangles.

b. What is the total area, in square units, of the rectangles when $x = 5$ and $y = 2$?

Question 8.

A theater group earned a total of $5180 selling tickets to a musical.

- Tickets for balcony seats sold for $5 each.
- Tickets for orchestra seats sold for $8 each.
- The group sold four times as many tickets for balcony seats as for orchestra seats.

How many tickets for balcony seats were sold?

A. 140

B. 360

C. 560

D. 740

Question 9.

What are the coordinates of the point where the lines $y = 2x - 1$ and $y = 4x + 13$ intersect? Show your work or explain how you know.

Question 10.

The table below shows the relationship between x and $f(x)$ for the linear function $f(x)$.

x	$f(x)$
0	10
2	2
4	−6
6	−14

What is the slope of $f(x)$?

A. −8

B. −4

C. 4

D. 8

Bonus Question

Question 11

Mathematics

Use the information provided to answer Part A through Part D for question 40.

The population of a city in 2005 was 36,000. By 2010, the city's population had grown to 43,800 people.

40. Part A

Assuming that the population of the city has grown linearly since 2005 and continues to grow at the same rate, what will be the population in 2015?

Enter your answer in the box.

Part B

Which expression is an appropriate exponential model for the population of the city? Let t represent the time, in years, since 2005.

A. $36{,}000(1.04)^{t}$

B. $36{,}000(1.04)^{5t}$

C. $36{,}000(1.217)^{t}$

D. $36{,}000(1.217)^{5t}$

Part C

Assuming that the population of the city has grown exponentially since 2005 and continues to grow at the same rate, what will be the population in 2015? Give your answer to the nearest whole number.