Algebra 1 Quick-Quiz-03062024

Question 1

The table shown gives values of the function $y = g(x)$ for selected values of x.

x	0	1	2	3
$g(x)$	3	6	12	24

Which represents $g(x)$?

- A. $g(x) = 3 + 2x$
- B. $g(x) = 3 \cdot 2x$
- C. $g(x) = 3 \cdot x^2$
- D. $g(x) = 3 \cdot 2^x$

Question 2

A rectangular box has a width equal to twice the height. The formula $V = 2h^2l$ can be used to find the volume, V, of the box if the height, h, and length, l, are known. What is an equation for the height of the box in terms of the volume and length?

Enter your answer in the space provided. Enter **only** your answer.

$h =$ ☐

Question 3.

$f(x) = x^2$ for all real numbers x. $g(x) = (x-1)^2 + 2$ for all real numbers x.

Part A

Which statement is true about f and g?

- A. The graph of $g(x)$ can be drawn by translating the graph of $f(x)$ 1 unit left and 2 units up.
- B. The graph of $g(x)$ can be drawn by translating the graph of $f(x)$ 1 unit right and 2 units up.
- C. The graph of $g(x)$ can be drawn by translating the graph of $f(x)$ 1 unit left and 2 units down.
- D. The graph of $g(x)$ can be drawn by translating the graph of $f(x)$ 1 unit right and 2 units down.

Question 4.

The graph of the function $h(x)$ is the result of reflecting the graph of $f(x)$ over the x-axis and then translating 1 unit up. Which equation defines $h(x)$?

A. $h(x)=(-x)^2+1$

B. $h(x)=-x^2+1$

C. $h(x)=-(x^2+1)$

D. $h(x)=(-x+1)^2$

Question 5.

Ben researched the population of his town for each of the last ten years. He created a scatterplot of the data and noticed that the population increased by about the same amount each year. Ben will determine the equation of the line of best fit for his data.

Which of the following statements about the equation of the line of best fit is true?

A. The slope is zero.

B. The slope is positive.

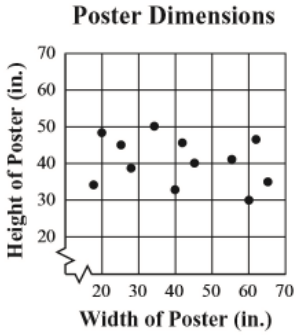
C. The slope is negative.

D. The slope is undefined.

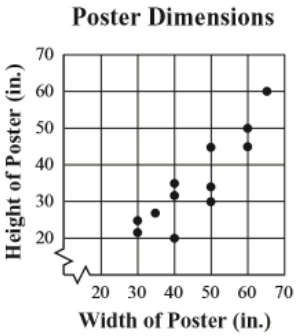
Question 6.

Janice observed that the heights of the posters in her apartment are always greater than the widths. Which of the following scatterplots could represent the dimensions of the posters in Janice's apartment?

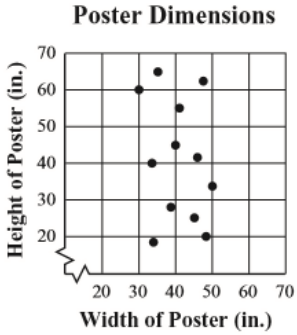
A.



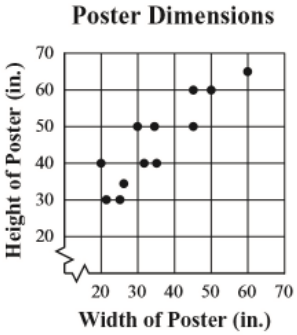
C.



B.



D.



Question 7.

Which expression is equivalent to $3 + 2(x + 4)(x - 4)$?

- A. $2x^2 - 13$
- B. $2x^2 - 29$
- C. $2x^2 - 35$
- D. $5x^2 - 80$

Question 8.

In the equation below, k and m represent rational numbers.

$$km = 1$$

Which of the following **must** be true?

A. either k or m is equal to 1

B. k and m are both less than 0

C. k is the multiplicative inverse of m

D. k and m are both the same distance from 0 on a number line

Question 9.

Today (Week 0), a certain flower is 0.75 foot tall. Each week, the flower will grow 25% taller than it was the week before. In the function below, t is the number of weeks from today and $h(t)$ is the predicted height after t weeks.

$$h(t) = \frac{3}{4} \times 1.25^t$$

What will the average rate of change be from Week 0 to Week 5?

A. 0.27 foot per week

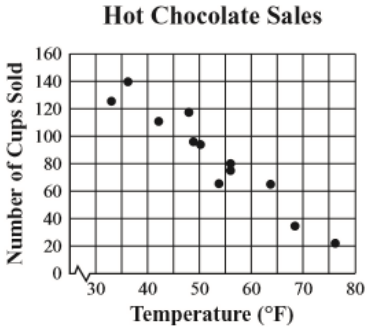
B. 0.31 foot per week

C. 1.54 feet per week

D. 3.25 feet per week

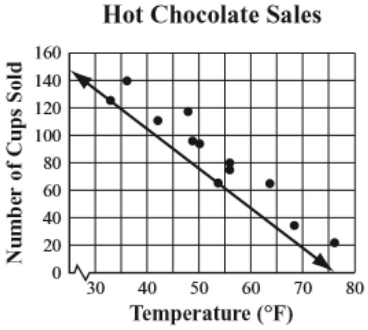
Question 10

The scatterplot below shows the relationship between the temperature, in degrees Fahrenheit, at a football game and the number of cups of hot chocolate sold during the game.

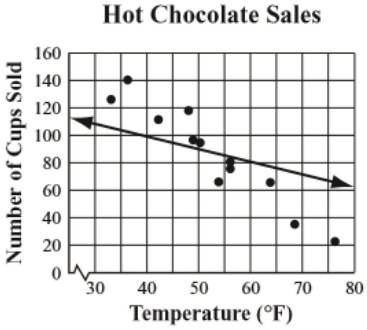


Which of the following graphs best represents the line of best fit for this data?

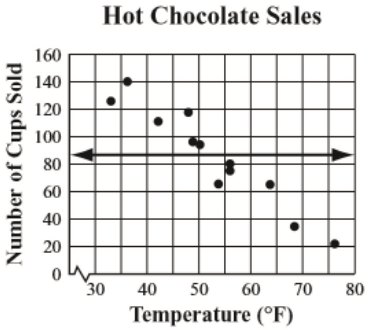
A.



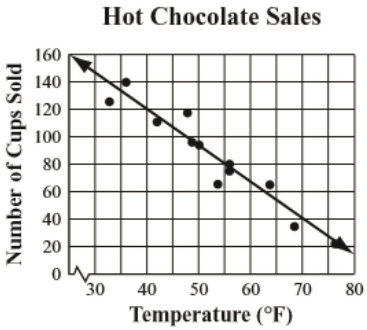
C.



B.



D.



Bonus Question

Question 11

A chef is making 20 pounds of fruit salad to sell in his shop. The chef will use only grapes and blueberries in the fruit salad.

Let x and y be defined as follows:

- x = the number of pounds of grapes the chef will use
- y = the number of pounds of blueberries the chef will use

a. Write an equation in terms of x and y that can be used to represent the total number of pounds of fruit salad the chef will make.

Grapes cost \$2.50 per pound, and blueberries cost \$4.00 per pound. The chef spent a total of \$59.00 for grapes and blueberries for the fruit salad.

b. Write an equation in terms of x and y that can be used to represent the total cost, in dollars, of the fruit salad.

c. Use your answers from parts (a) and (b) to determine the number of pounds of grapes **and** the number of pounds of blueberries the chef will use to make the fruit salad. Show or explain how you got your answer.