Algebra Quick Quiz 02192020

Question 1

Part A

13 A store donated $45,000 to a local college. This amount was 1% of the store's profit, in dollars. What was the store's profit, in dollars?

Part B

If $y \neq 0$, which of the following is equivalent to the expression below?

$$\frac{15y^9}{5y^3}$$

A. $3y^3$
B. $3y^6$
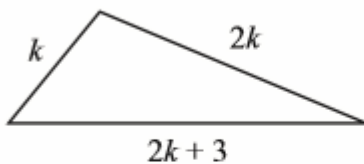C. $10y^3$
D. $10y^6$

Question 2

18 This list shows the ages of 12 actors in a video.

17, 16, 20, 20, 14, 19, 16, 74, 15, 17, 18, 16

How many years older than the median age is the actor represented by the outlier of the data?

Question 3.

The dimensions of a triangle, in units, are represented by expressions, as shown in the diagram below.

Which of the following expressions represents the perimeter, in units, of the triangle?

A. $4k^3 + 3$

B. $5k^3 + 3$

C. $4k + 3$

D. $5k + 3$

Question 4.

I am depending on you to be real honest here. Do NOT use your graphing calculator or Desmos to solve this question.
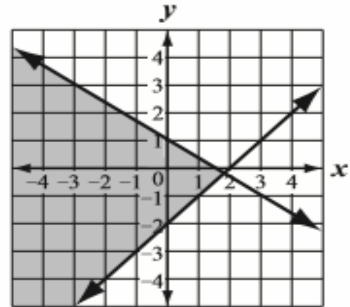
4 Which of the following graphs represents the solution of the system of inequalities below?
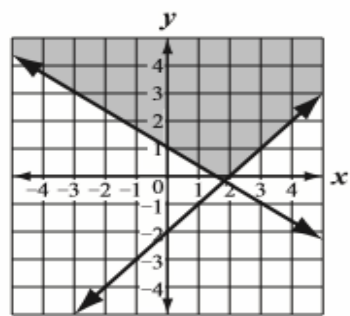
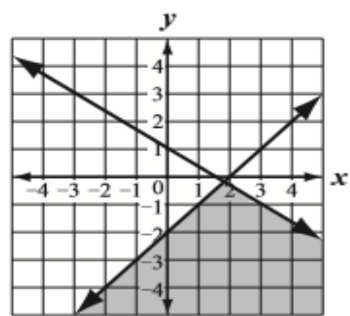$$y \geq x - 2$$
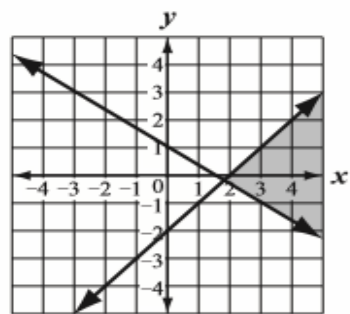$$y \leq -\tfrac{2}{3}x + 1$$

A.

B.

C.

D.

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.
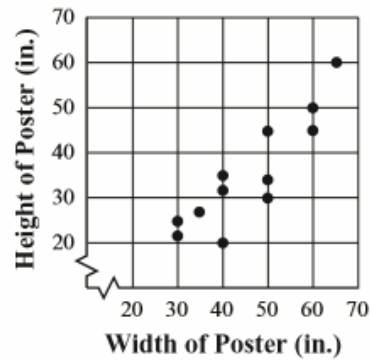D. The slope is undefined.

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?
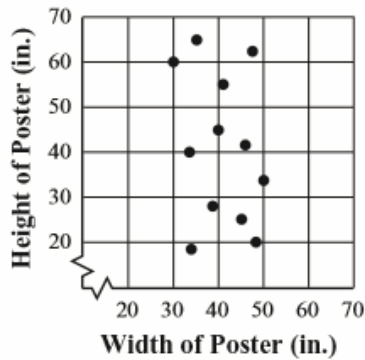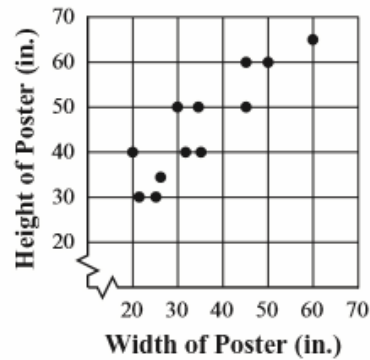
A. **Poster Dimensions**

Width of Poster (in.)

C. **Poster Dimensions**

Width of Poster (in.)

B. **Poster Dimensions**

Width of Poster (in.)
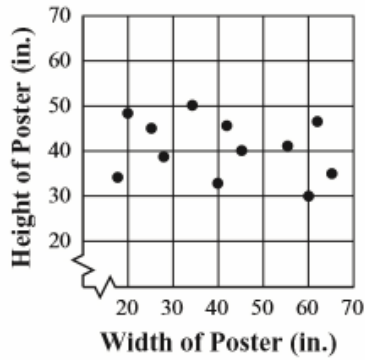
D. **Poster Dimensions**

Width of Poster (in.)

Question 7.

Which of the following equations is true for all rational number values of x, y, and z?

A. $x(y + z) = (y + z)x$

B. $x(y + z) = (x + y)z$

C. $x(y + z) = xy + z$

D. $x(y + z) = (xy)(xz)$

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

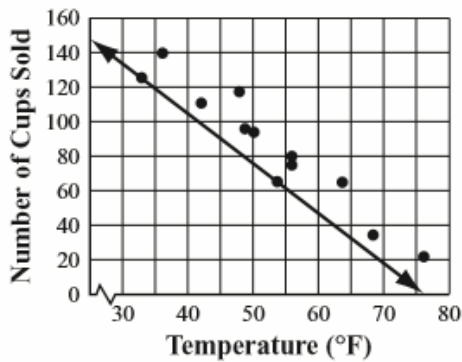D. k and m are both the same distance from 0 on a number line

Question 9.

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.
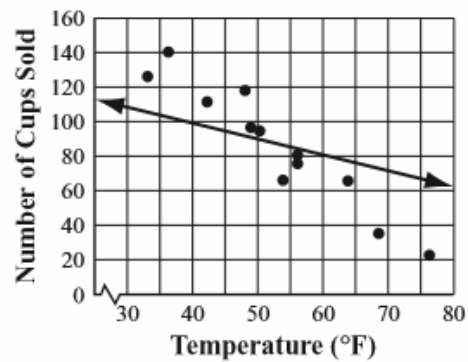
Hot Chocolate Sales
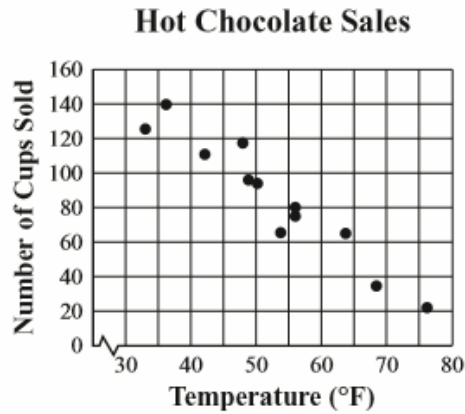
Which of the following graphs best represents the line of best fit for this data?
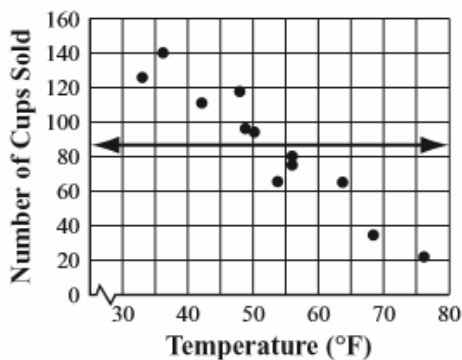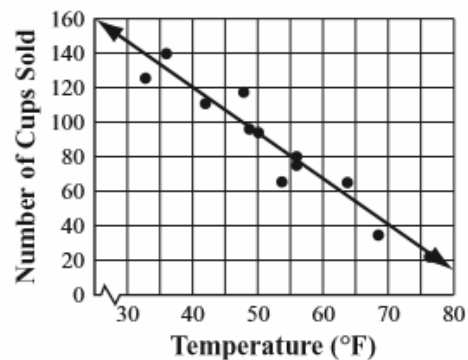
A. **Hot Chocolate Sales**

C. **Hot Chocolate Sales**
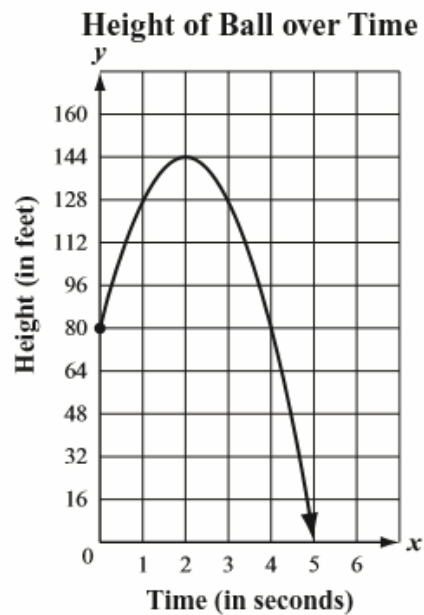

B. **Hot Chocolate Sales**

D. **Hot Chocolate Sales**

Question 10.

The graph below represents y, the height in feet of a ball, x seconds after the ball was thrown upward from a bridge that crosses a river.

Height of Ball over Time

a. What is the y-intercept of the graph? Show or explain how you got your answer.

b. What does the y-intercept represent in the context of this situation?

c. After how many seconds did the ball reach its maximum height? Show or explain how you got your answer.

d. What is the maximum height, in feet, the ball reached? Show or explain how you got your answer.

e. After how many seconds did the ball reach the surface of the river? Show or explain how you got your answer.

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.