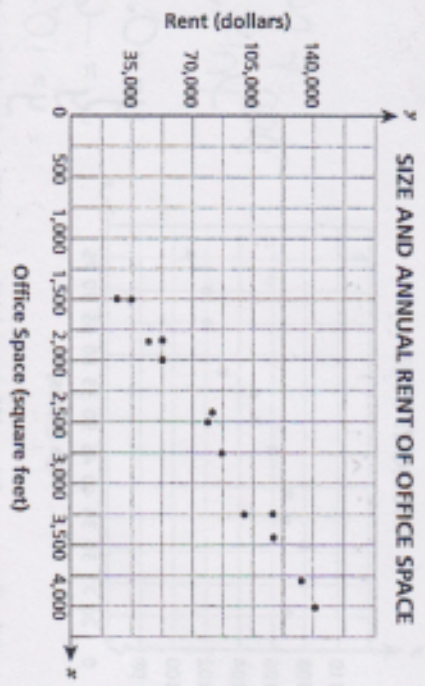


8<sup>th</sup> GRADE MATHEMATICS TEST PREP  
QUESTION #39

The scatter plot shows the sizes and annual rents of some office spaces in the downtown area of a city.



- What would the line of best fit reveal about these data?
- A There is a strong negative relationship between the cost of rent and the size of the office space.
  - B There is a strong positive relationship between the cost of rent and the size of the office space.
  - C There is a weak positive relationship between the cost of rent and the size of the office space.
  - D There is a weak negative relationship between the cost of rent and the size of the office space.

QUESTION #40

Which function has a greater slope and a greater y-intercept than the linear function represented in the table?

x	y
-1	5
1	9
3	13
5	17

- A  $y = 2x + 8.5$  *smaller*
- B  $y = 3x + 7.5$  *both greater*
- C  $y = 5x + 6.5$  *smaller*
- D  $y = 10x + 5.5$  *smaller*

Handwritten work for Question 40:

$$m = \frac{4}{2} \rightarrow m = 2$$

$$y = mx + b$$

$$9 = (2)(1) + b$$

$$b = 7$$

$$y = 2x + 7$$

8<sup>th</sup> GRADE MATHEMATICS TEST PREP  
QUESTION #41

1. A trainer for a professional football team keeps track of the amount of water players consume throughout practice. The trainer observes that the amount of water consumed is a linear function of the temperature on a given day. The trainer finds that when it is 90°F the players consume about 220 gallons of water, and when it is 76°F the players consume about 178 gallons of water.

Part A: Write a linear function to model the relationship between the gallons of water consumed and the temperature.

Part B: Explain the meaning of the slope in the context of the problem.

Part A: let  $x = \text{temp}$  let  $y = \text{gallons}$

Part A:

$$\#(90, 220) \quad m = \frac{y_2 - y_1}{x_2 - x_1}$$

$$\#(76, 178)$$

$$m = \frac{178 - 220}{76 - 90} = \frac{-42}{-14} = 3$$

$$m = 3$$

Handwritten work for Part A:

$$y = mx + b$$

$$220 = (3)(90) + b$$

$$220 = 270 + b$$

$$-270 - 270$$

$$-50 = b$$

$$y = 3x - 50$$

Part B: Slope  $\frac{3}{1}$  gallons increase by 3 gallons for every 1 degree increase