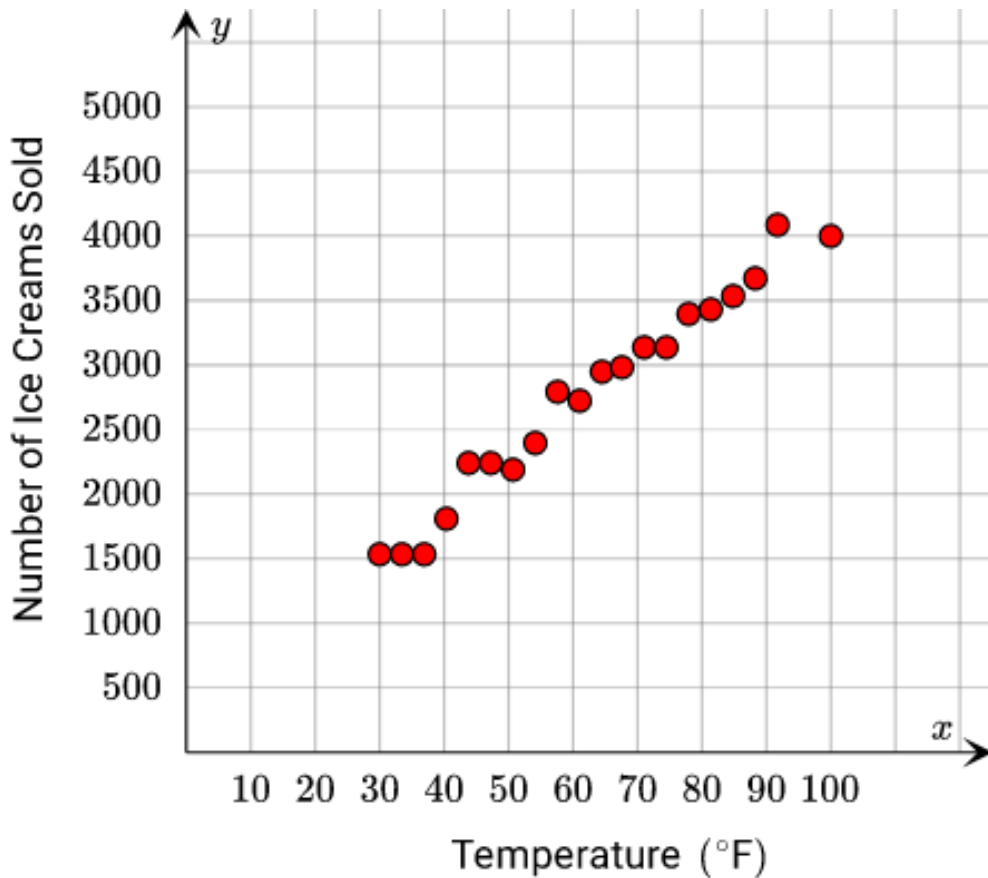


Name:

Class:

## Algebra, Unit 3: Practice Summative Assessment

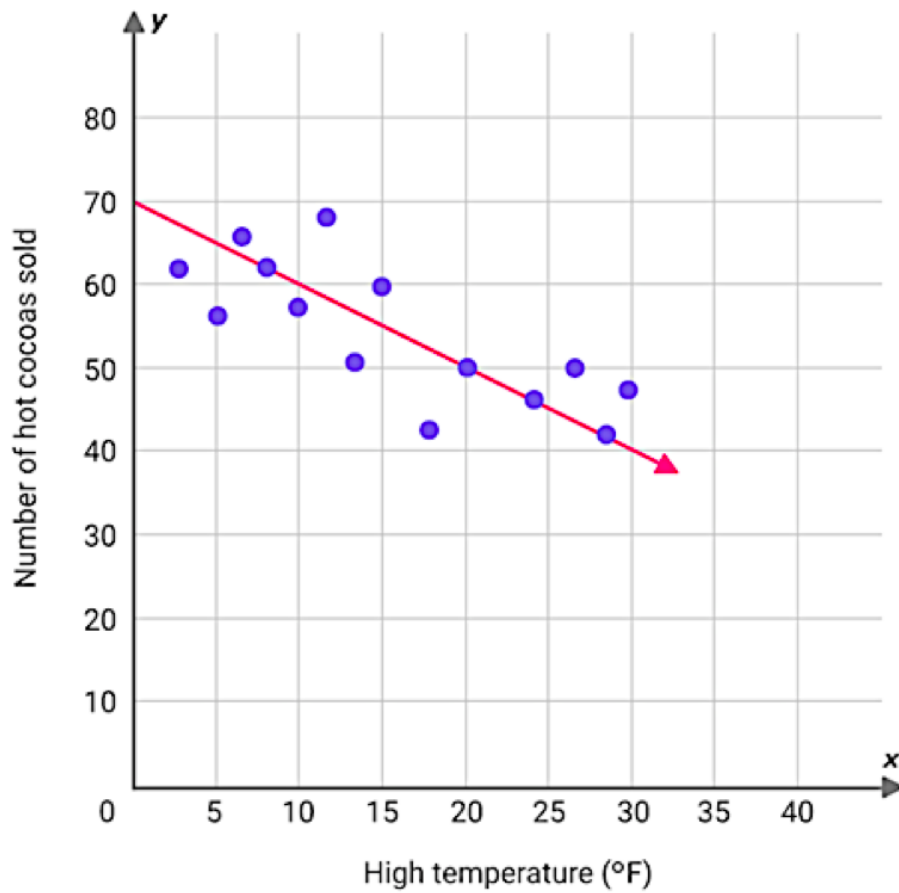
### Question 1



Which **three** statements about the scatter plot are correct?

- (A) There is a positive trend
- (B) There is an outlier in the data
- (C) There is a cluster of data
- (D) There is a strong correlation
- (E) There is a linear association

Question 2



Part A Which of the below is the equation for the line of best fit?

- (A)  $y = -0.5x - 70$
- (B)  $y = -x + 70$
- (C)  $y = -0.5x + 70$
- (D)  $y = -x - 70$

Part B If it is 15 degrees, how many hot cocoas are expected to be sold?

- (A) 60
- (B) 55

Part C      What does the y-intercept of the line of best fit mean in this context?

Part D      What does the slope of the line of best fit mean in this context?

Part E      The temperature is predicted to be 45 degrees tomorrow. How many hot cocoas are expected to be sold? **Show your work!**

Question 3

Which **two** of the following would you expect to show a **negative association**?

- Ⓐ Price of an airline ticket and length of the flight.
- Ⓑ Price of a used car and number of miles the car has been driven.
- Ⓒ Number of people helping pick up a room and length of task.
- Ⓓ Amount of snow on a walkway and the time needed to shovel.
- Ⓔ A student's hair length and their score on a science test.

#### Question 4

Ethan asked a random sample of students the two questions below.

- Do you have brothers or sisters?
- Does your family have a dog?

Ethan created this table to display the data he collected.

	Have No Dog	Have a Dog	Total
Have No Brothers or Sisters	15	25	40
Have Brothers or Sisters	80	60	140

Part A Complete the table with relative frequency by row.  
Round to the nearest tenth of a percent.

	Have No Dog	Have a Dog	Total
Have No Brothers or Sisters			100%
Have Brothers or Sisters			100%

Part B Based on the data, does not having a brother or sister make it more or less likely that you will have a dog? Use calculations from Part A to justify your answer.

### Question 5

A science teacher took data about the time studying for a quiz and the resulting score.

For the first 84 students taking the quiz, the teacher found a strong positive correlation with an equation for the line of best fit of  $y = 14x + 58$ , where  $y$  was the student's total score and  $x$  was the number of hours studied.

Six students were absent for the test and took it the following day. Their data is below.

Part A Complete the residual table below for the new data.

Hours Studies	Science Quiz Score	Residual
1.0	80	
1.5	80	
1.5	75	
2.0	75	
2.0	94	
2.5	90	

Part B Is the new data likely to substantially change the teacher's equation for the overall data's line of best fit? Explain your answer.

Part C Looking at the data, another teacher exclaimed: "This is proof that studying improves scores." Do you agree? Explain why or why not.

Question 6

Draw a line from each graph to the matching correlation coefficient.



$$r = -0.49$$

$$r = -0.97$$

$$r = 0.76$$

$$r = 0.89$$