Lesson 8 Practice Problems

1. The number of hours worked, x, and the total dollars earned, y, have a strong positive relationship.

   Explain what it means to have a strong positive relationship in this situation.

2. The number of minutes on the phone and the customer satisfaction rating have a weak negative relationship.

   Explain what it means to have a weak negative relationship in this context.

3. *Technology required. Use a graphing calculator to answer the questions.*

x	y
5	2
6	4.6
7.5	7.2
8	8.4
8.3	8.2
9	9.1
10.2	10.3
11.4	9.9
11.4	11
12	12.5

a. What is an equation of the line of best fit?

b. What is the value of the correlation coefficient?

4. Elena collects data to investigate the relationship between the number of bananas she buys at the store, x, and the total cost of the bananas, y. Which value for the correlation coefficient is most likely to match a line of best fit of the form $y = mx + b$ for this situation?

A. -0.9

B. -0.4

C. 0.4

D. 0.9

5. A researcher creates a scatter plot that displays the relationship between the number of years in business, x, and the percentage of company business that is fair trade, y. The researcher creates a line of best fit, $y = 0.091x + 0.060$, and wants to find the residuals for the companies that have been in business for 3 years.

   a. Find the residuals for the two points representing companies that have been in business for 3 years, $(3, 0.42)$ and $(3, 0.3)$.

   b. Compare the residuals for the two companies who have been in business for 3 years. How are they different? How are they similar? What does the information about the residuals for the two companies tell you about their fair trade business?

(From Unit 3, Lesson 6.)

6. The correlation coefficient, r, is given for several different linear models for a data set. Which value for r indicates the worst fit for the data?

   A. 0.01

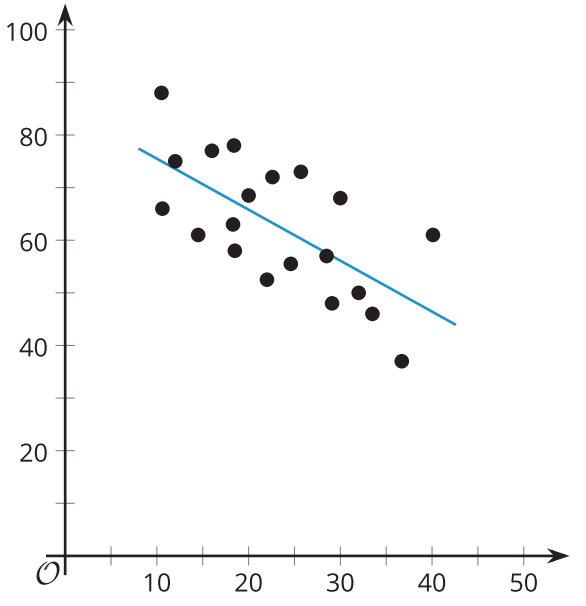
   B. 0.5

   C. -0.99

   D. 1

(From Unit 3, Lesson 7.)

7. Which of the following is the best estimate of the correlation coefficient for the line of best fit shown in the scatter plot?



A. -0.9

B. -0.4

C. 0.4

D. 0.9

(From Unit 3, Lesson 7.)