

## Lesson 9 Practice Problems

1. Priya creates a scatter plot showing the relationship between the number of steps she takes and her heart rate. The correlation coefficient for the data is 0.88.
  - a. Are they correlated? Explain your reasoning.
  
  
  
  
  
  
  
  
  
  
  - b. Do either of the variables cause the other to change? Explain your reasoning.
  
  
  
  
  
  
  
  
  
  
2. Kiran creates a scatter plot showing the relationship between the number of students attending drama club and the number of students attending poetry club each week. The correlation coefficient for the data is -0.36.
  - a. Are they correlated? Explain your reasoning.
  
  
  
  
  
  
  
  
  
  
  - b. Do either of the variables cause the other to change? Explain your reasoning.

3. A news website shows a scatter plot with a negative relationship between the amount of sugar eaten and happiness levels. The headline reads, "Eating sugar causes happiness to decrease!"

a. What is wrong with this claim?

b. What is a better headline for this information?

4. A group of 125 college students are surveyed about their note taking and study habits. Some results are represented in the table.

	prefer writing notes by hand	prefer typing notes	don't take notes
study for less than 1 hour	22		8
study for 1 hour or more	38	28	3

How many students prefer typing notes and study for less than 1 hour?

(From Unit 3, Lesson 1.)

5. The number of miles driven,  $x$ , and the number of gallons remaining in the gas tank,  $y$ , have a strong negative relationship.

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

(From Unit 3, Lesson 8.)

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

$x$	$y$
10.2	31
10.4	27
10.5	29
10.5	30
10.5	31
10.6	26
10.8	25
10.8	26
10.9	27
11	24
11.2	22

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

- b. What is the value of the correlation coefficient?

(From Unit 3, Lesson 8.)