Enhanced End of Topic Assessment

Name _____ Date _____

Part A: Multiple-Choice Questions

1. The table shows Savannah's salary for different years.

Year	2000	2001	2002	2003
Salary ($)	40,000	42,000	46,000	44,500

Which linear function best models the data if x represents the number of years since 2000?

a. $y = 39{,}625x + 4375$

b. $y = 4375x + 39{,}625$

c. $y = 1750x + 40{,}500$

d. $y = 40{,}500x + 1750$

2. Which statement suggests causation?

a. When you are at the beach, you get wet.

b. When you study for a test, your classmate studies too.

c. When you carry an umbrella to school, it rains.

d. When you don't brush your teeth, you get cavities.

3. The table shows the number of bacteria at different times during an experiment. Using a linear function to model the data, what is the best prediction for the number of bacteria there will be after 24 hours?

Time (Hours)	3	6	9	12
Number of Bacteria	25	85	168	205

a. 35

b. 277

c. 463

d. 819

4. Which statement does **NOT** describe an association and a causation?

a. Drivers who speed have more wrecks.

b. A plant grows more when it is sunny.

c. When Tina leaves for school, her brother does too.

d. Less time spent exercising contributes to weight gain.

5. The table shows the monthly high temperature for Austin, Texas, in degrees Fahrenheit over a 12-month period.

Month	Temperature (°F)
1	90
2	99
3	98
4	99
5	104
6	108
7	109
8	110
9	112
10	100
11	91
12	90

What does the correlation coefficient for the data indicate about the strength of the linear association between the month and the temperature in Austin?

a. Weak negative correlation

b. Strong negative correlation

c. Weak positive correlation

d. Strong positive correlation

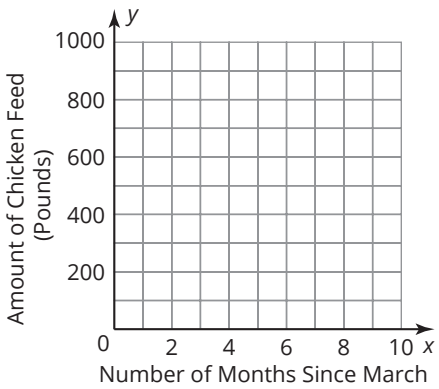
Part B: Open-Response Questions

6. The table shows the decrease in the amount of chicken feed in a farmer's barn over a seven-month period.

Month	March	April	May	June	July	August	September
Pounds	950	858	793	714	624	560	480

a. Determine a linear function *y*, the number of pounds, in terms of *x*, the number of months since march, to model the data.

b. Construct a plot of the data, and graph the linear regression equation.

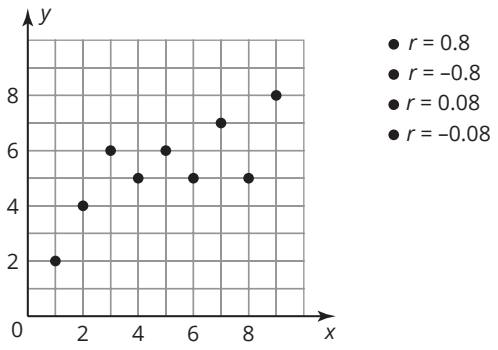


c. Predict the amount of feed in December if the decrease in feed continues at the same rate.

d. Do you think a linear model is a good fit for the data? Explain your reasoning.

7. Consider the scatter plot shown.

a. Determine whether the points in the scatter plot have a positive correlation, a negative correlation, or no correlation. Then, determine which *r*-value is most accurate. Explain your reasoning.



b. Does the scatter plot represent a function? Why or Why not.

8. A class survey showed that students who participated in school government had higher grade-point averages. Karl concluded that having a position in school government increased the students' grades. What are two or more confounding variables that could have had an effect on Karl's conclusions?

9. In the given situation, does the correlation imply causation? List reasons why or why not.

As the sales of ice cream increase, so do the sales of sunglasses.

10. In the given situation, does the correlation imply causation? List reasons why or why not.

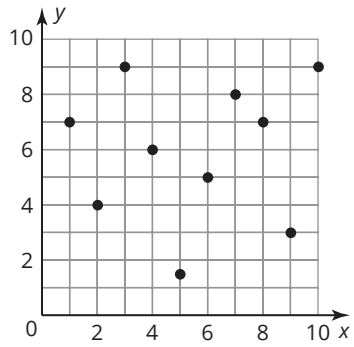
When a person is exercising, the number of calories burned goes up every minute.

11. The table shows the attendance at a minor-league baseball game for the first 8 games of the season.

Game	1	2	3	4	5	6	7	8
Attendance	8673	8903	9103	9091	9117	9134	9256	9573

What is the correlation coefficient for the data, and what does it indicate about the strength of the linear association between the number of games and the attendance at the games?

12. Missy is analyzing the scatter plot shown. She determines that the data in this scatter plot must have a negative correlation because a negative correlation means the data points are not close to forming a straight line. Is Missy correct? Explain your reasoning.



Part C: Griddable Response Questions

Record your answers and fill in the bubbles.

13. The table shows the amount Andre earned as a waiter. The money, in dollars, is the total amount he earned.

Times (hours)	0	1	2	3	4	5	6	7
Money (dollars)	0	16	35	47	60	69	90	103

Based on the table, what is the best prediction of the amount Andre earned after 9 hours?