

Name:

Period:

Date:

Practice Worksheet: Linear Regression

Describe the correlation and match the r-values to the graph.

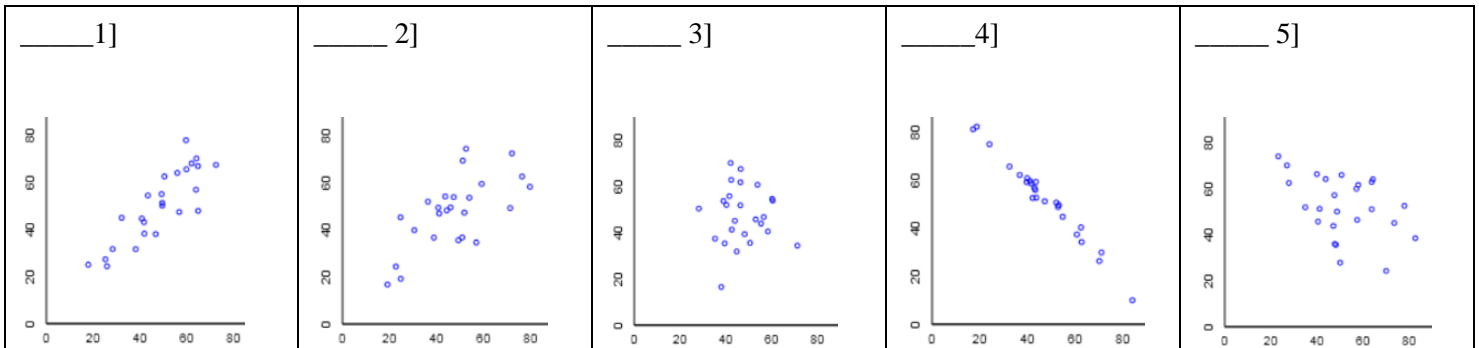
A) $r \approx -0.019$

B) $r \approx -0.990$

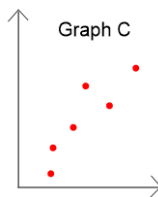
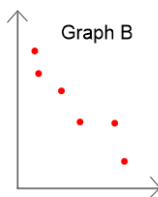
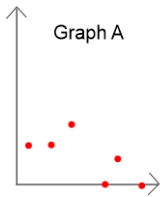
C) $r \approx -0.419$

D) $r \approx 0.857$

E) $r \approx 0.669$



Match the graphs to the description of the relationship shown in the graph.



_____ 6] Number of college classes taken and hours of free time.

_____ 7] Number of college classes taken and the cost of tuition.

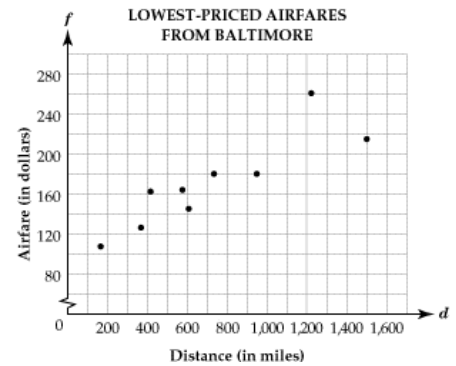
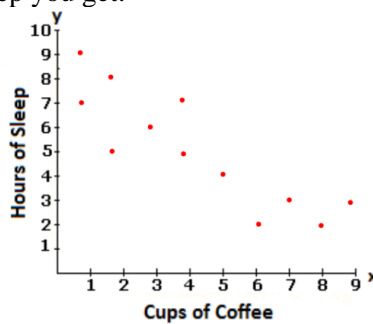
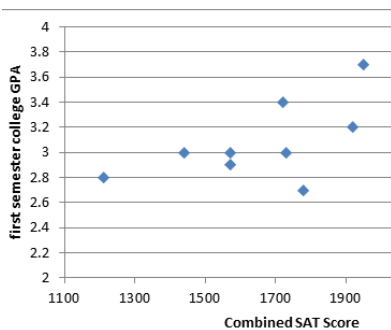
_____ 8] Number of college classes taken and number of roommates.

Describe the trend in the scatter plot by completing each statement.

9] As SAT Score _____, college GPA _____.

10] The _____ cups of coffee you drink, the _____ hours of sleep you get.

11] The cost of airfare _____ as the distance from Baltimore _____.



Use the line of best fit to make predictions for the following real-world problems.

Round to two decimal places for the line of best fit and four decimal places for the correlation coefficient.

12] The table shows the number of local softball teams for the years 1999 to 2003.

Years <u>since</u> 1999	0	2	3	4
Number of teams	163	149	143	119

C] How many softball teams there were in 2000. Show work. Does the prediction seem reasonable? Explain.

A] Line of best fit:

D] Approximate the number of softball teams in 2020. Show work. Does the prediction seem reasonable? Explain.

B] Describe the correlation:

13] The table shows the weight loss of a person over a time.

Weeks	0	1	3	5	7
Weight (lbs)	219	214	216	205	199

A] Line of best fit:

B] Describe the correlation:

C] Approximate the weight of a person after week 6. Show work. Does the prediction seem reasonable? Explain.

D] Approximate how many weeks it will take for the person to reach the target weight of 180 lbs. Show work. Does the prediction seem reasonable? Explain.

14] The table shows the height of a young tree from 1995 to 2001.

Years <u>since</u> 1995	0	1	3	5	6
Height (feet)	5.1	6.4	9	11.6	12.9

A] Line of best fit:

B] Describe the correlation:

C] Approximate the year in which the tree will be 15 feet tall. Show work. Does the prediction seem reasonable? Explain.

D] Approximate the height of the tree in 2025. Show work. Does the prediction seem reasonable? Explain.

15] A BMI of 30 or greater can create an increased risk of developing medical problems associated with obesity. The table shows the height and weight for individuals who have a BMI of 30.

Height (in)	61	65	67	72	73
Weight (lbs)	160	180	190	220	230

A] Line of best fit:

B] Describe the correlation:

C] Approximate the weight of a 6 foot 3 inch tall person with a BMI of 30. Show work. Does the prediction seem reasonable? Explain.

D] Approximate the height of a person with a BMI of 30 who weighs . Show work. Does the prediction seem reasonable? Explain.

16] The table shows sales data for a small retail store by month. The store's fiscal year begins in August.

Months since August	0	1	2	3	6
Average Sales (thousands)	8.1	7.5	4.3	9.1	5.7

A] Line of best fit:

B] Describe the correlation:

C] Approximate the average sales in December. Show work. Does the prediction seem reasonable? Explain.

D] Approximate the average sales in April. Show work. Does the prediction seem reasonable? Explain.