

Talley

Part 3 – This is part of your exam grade.

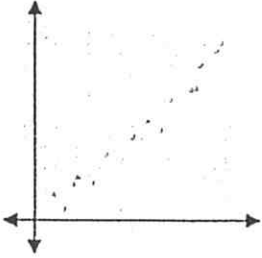
Linear Function Applications

Correlation Unit - I can use deductive reasoning to determine the correlation between real-life data.

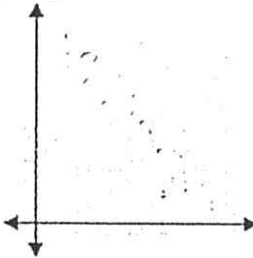
- I can determine whether a scatterplot shows a positive, negative, or no correlation for the given data.

1. Draw a sketch of a scatter plot with the correlation described.

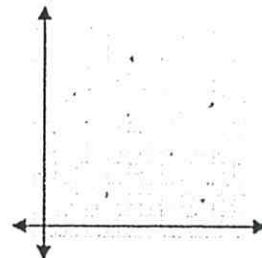
a) positive correlation



b) negative correlation



c) no correlation



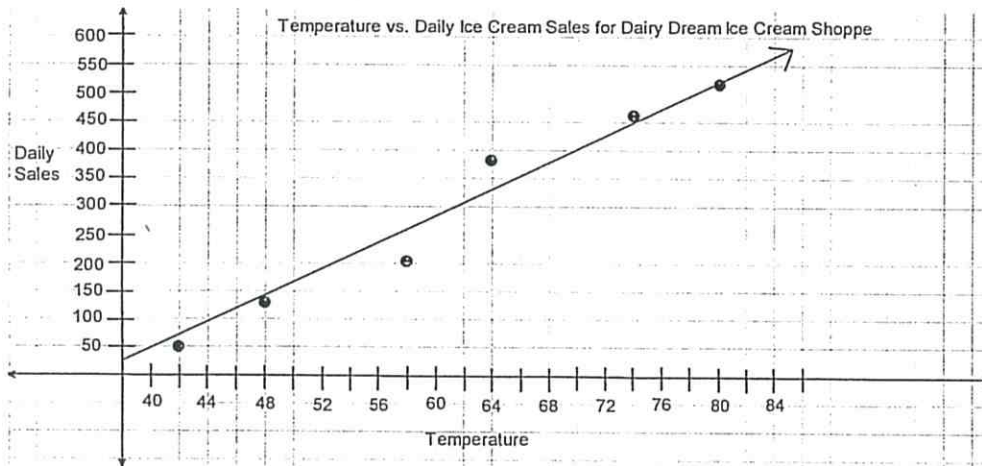
2. What type of correlation would you expect for each situation?

- a) The distance that a person rides their bike and the amount of calories burned. *Pos*
 b) The amount of free time a person has and the amount of time they spend working. *Neg*
 c) A person's height (inches) and the number of pets they own. *No*

3. Describe what a correlation coefficient tells about a set of data. (Include +/- as well as value) *How strongly two variables are related*

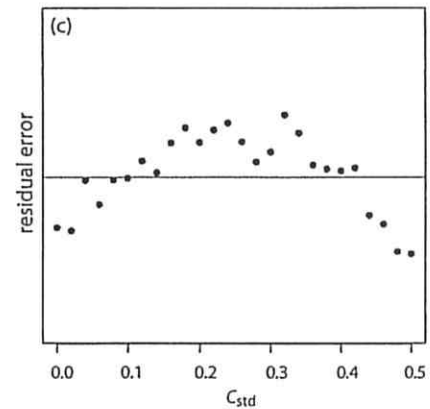
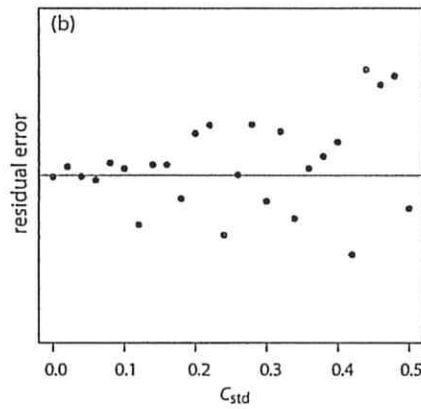
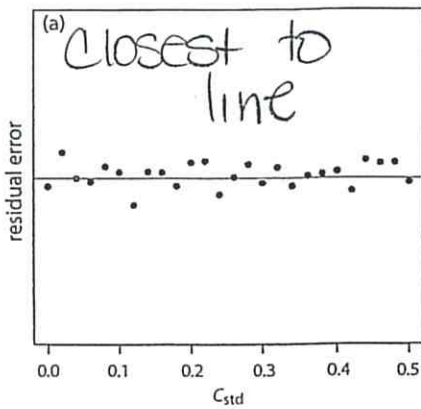
- I can use the given line of best fit to make prediction for new data.

Use the line of best fit to answer questions 5 and 6.

4. Based on the line of best fit, predict the daily sales if the temperature was 54 degrees. *\$ 210-*5. Based on the line of best fit, predict the temperature if the daily sales was \$100. *44°*

- I can use residual plots to determine if a linear line is the best fit for the given data.

6. Of the following, which residual plot shows a linear regression for a set of data. Explain.



- I can use the given data and scatterplot to make predictions.
- I can generate a correlation coefficient (r) using the calculator.
- I can create a *Linear Regression Equation* from a table of data.

Use the table of values to answer questions 9 - 13.

Minutes using cell phone	Battery charge percentage
0	100
15	96
30	92
45	88
60	83
75	76
90	70

7. Enter this data into your calculator. What is the best fit line?

$$y = -0.33x + 101.32$$

8. Use this data to determine the type of correlation.

Negative

9. What is the correlation coefficient for this data? (r)

-0.99

10. Using your best fit line for this data, predict the battery charge percentage after 95 minutes?

69.97%

11. Using your best fit line for this data, predict the number of minutes it would take for your phone to run out of charge?

307.03

Part 4 – This is part of your exam grade.

Systems of Linear Equations – I can write and solve systems of linear equations.

1. Solve each system of equations:

a) $y = 2x - 5$
 $y = -4x + 19$ $(4, 3)$

b) $x + y = 6$
 $-3x + y = 2$ $(1, 5)$

c) $2x + 3y = 6$
 $3x + 4y = 5$ $(-9, 8)$

Write and solve a system of linear equations for each problem below.

2. On Mr. Wood's farm, he raises chickens and cows. There are 34 animals in all. Mr. Wood counts 110 legs on these animals. Find the number of each type of animal.

13 chickens

21 cows

3. A test has 24 questions worth 100 points. The true/false questions are worth 4 points each and the multiple choice questions are worth 5 points each. How many of each type of question are on the test?

20 multiple choice

4 true false

4. Emma is throwing a party! She buys 3 rolls of streamers and 15 party hats for \$30. Later, she buys 2 more rolls of streamers and 4 more party hats for \$11. Find the cost of each roll of streamers and each party hat.

\$ 2.50 streamers

\$ 1.50 party hats