Name	Date
Real World Math	Period

## <u>Unit 6 Quiz #2 REVIEW</u> <u>Using Linear Regressions to Make Predictions</u>

1. Use the following data to sketch a scatter plot by hand.

Hours Slept	t <u>Test Score</u>						
8	83						
7	86						
7	74						
8	88						
6	76						
5	63						
7	90						
4	60						
9	89						
7	81						

2. Draw a line of best fit on the same axes as the scatter plot from question 1.

3. Using a graphing calculator, sketch the scatter plot and don't forget to use the window to label the axes.



Based on the scatter plot from question 3, it would be reasonable to conclude that the correlation coefficient for x and y is \_\_\_\_\_.

- a. between -0.5 and 0
- b. equal to O
- c. greater than 0
- d. less than -0.5

5. Which scatter plot most likely has a correlation coefficient equal to -0.5?



6. Sketch a scatter plot that represents a strong positive correlation.



7. For which scatter plot is the correlation coefficient approximately 0?

b.

a.





8. Which of the following definitions most clearly describes a linear regression?

- a. how much the y variable changes every time the x variable changes by 1
- b. a number between -1 and 1 which measures how close a set of points falls to a straight line
- c. a graph where the correlation coefficient equals 0
- d. the equation of the line of best fit

9. Use the following data to answer questions a-j. If necessary, round to the nearest hundredth.

Hours of Exercise	<u>Days Sick</u> per Year
<u>Each Week</u>	
15	5
12	5
4	12
18	3
6	9
8	7
8	8
10	6

- a. What is the linear regression equation?
- b. What is the correlation coefficient?
- c. What does the correlation coefficient tell us about this linear regression?
- d. What is the slope?

- e. What does the slope tell us about this set of data?
- f. What is the y-intercept?
- g. What does the y-intercept tell us about this set of data?
- h. Using your regression equation, make a prediction: If a person exercises 7 hours a week, how many days would you expect them to be sick this year?

i. Using your regression equation, make a prediction: Your friend told you that he was sick 4 days last year. Using the linear regression equation, determine how many hours he exercised each week?

j. Why is it beneficial to find a linear regression in this situation?