Name: _____ Date: _____

UNIT 4   **LESSON 6**

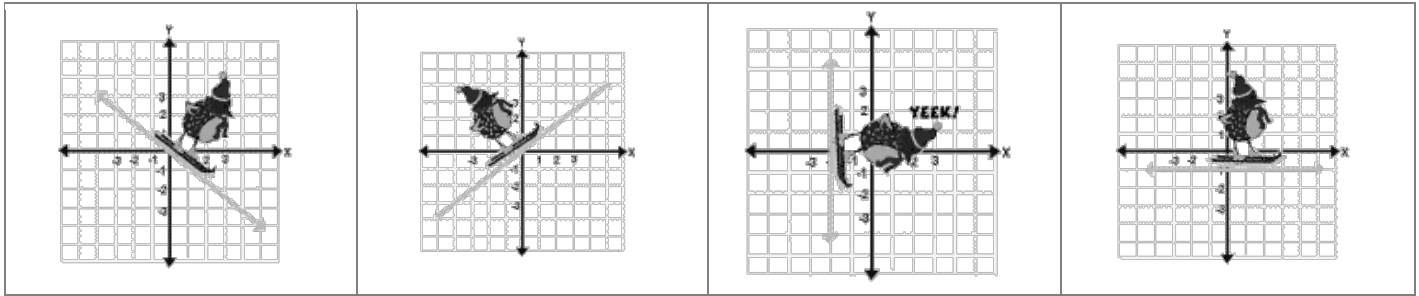Do Now: Describe the "ski bird's" slope as *positive, negative, zero, or no slope.*

a._____   b. ._____   c._____   d._____

AIM: INTRO TO SCATTER PLOTS

SCATTER PLOT_____

_____

CORRELATION RELATIONSHIP _____

_____

In many real-life situations, scatter plots follow patterns that are approximately linear.

If y tends to increase as x increases, then the paired data are said to be a _____.

If y tends to decrease as x increases, the paired data are said to be a _____.

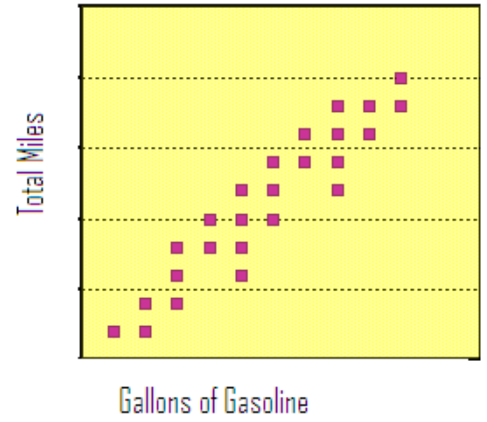If the points show no linear pattern, the paired data are said to have _____.

Directions: Identify the three types of correlation each scatterplot shows and write a conclusion for each.

1. Correlation:_____	2. Correlation:_____	3. Correlation:_____
Conclusion:_____ _____	Conclusion:_____ _____	Conclusion:_____ _____

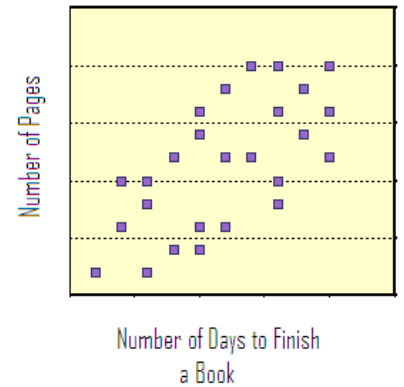4. Given the scatter plot below determine the following.

a) Correlation:_____

b) Conclusion:_____

_____

Total Miles

Gallons of Gasoline

5. Given the scatter plot below determine the following.

a) Correlation:_____

b) Conclusion:_____

_____

Number of Pages

Number of Days to Finish
a Book

6. Given the scatter plot below determine the following.

a) Correlation:_____

b) Conclusion:_____

_____

Time in Hours

Speed in Miles Per Hour
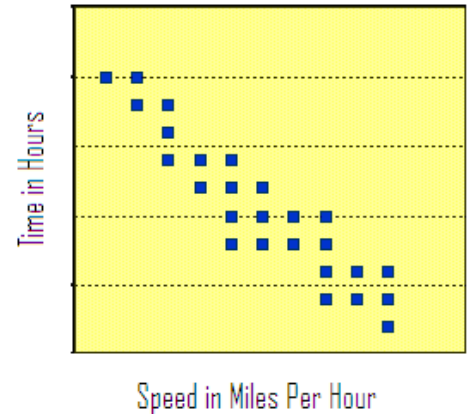
7. Which situation describes a negative correlation?

1) the amount of gas left in a car's tank and the amount of gas used from it

2) the number of gallons of gas purchased and the amount paid for the gas

3) the size of a car's gas tank and the number of gallons it holds

4) the number of miles driven and the amount of gas used

8. A positive correlation always exists on a scatter plot when

1) *y* remains unchanged as *x* increases

2) *y* changes randomly as *x* increases

3) *y* decreases as *x* increases

4) *y* increases as *x* increases

9. The scatter plot below represents the relationship between the number of peanuts a student eats and the student's bowling score. Which conclusion about the scatter plot is valid?

1) There is almost no relationship between eating peanuts and bowling score.

2) Students who eat more peanuts have higher bowling scores.

3) Students who eat more peanuts have lower bowling scores.

4) No bowlers eat peanuts.
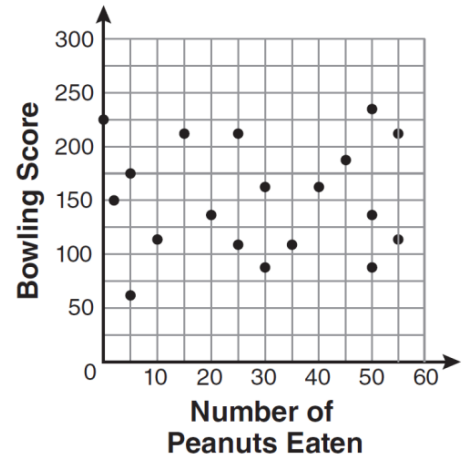
10. Which scatter plot shows the relationship between *x* and *y* if *x* represents a student score on a test and *y* represents the number of incorrect answers a student received on the same test?

1)

2)

3)

4)
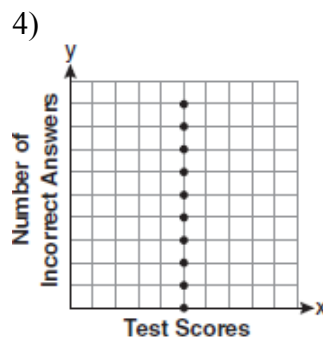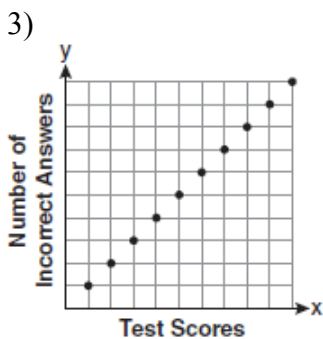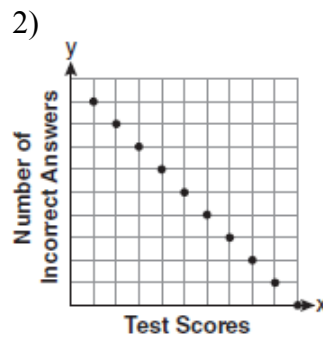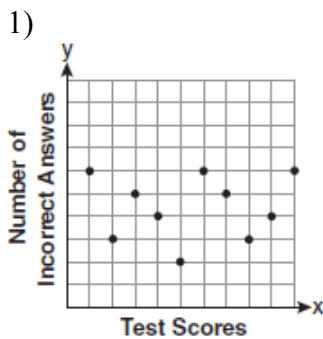
Directions: Carefully read each word problem. Make sure you underline, circle or highlight key information that will help you answer the question!

1. As the number of advertisements on television increases, the more garbage produced by Americans. A possible cause of this trend is that the more ads people watch, the more stuff they buy. The more stuff people buy, they more garbage they produce. A waste management company could analyze this relationship to predict how much garbage they need to be equipped to remove next year.

a) What kind of companies and/or agencies would be interested in knowing this statistic?

b) What kind of correlation would this data show on a scatter plot? (as advertisements increase, garbage produced increases)

2. As the jobless or unemployment rate increases, the number of houses being built declines—Contractors, carpenters, banks providing loans, and loggers who provide the logs for building new houses, might all be interested in understanding this relationship because the strength of the housing market directly impacts their jobs.

a) If we were to sketch a scatter plot to represent the above scenario, as use (x) to represent the unemployment rate and (y) to represent the number of houses being built.

b) Is the correlation of this data positive or negative?

c) Explain what the correlation means in the context of the scenario (what does the correlation mean in terms of x and y)

d) ** Challenge ** How would understanding this relationship or trend help contractors, carpenters, banks, etc?

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a Solve for *m* in the slope-intercept form of a linear equation.