4.1

Algebra 1 Agenda

Welcome Back! Don't forget the last page!!

				Stamp
Monday	1/5/2015	Objective:	No School	
		Assignment:	Conferences	
Tuesday	1/6/2015	Objective:	Scatter plots & Correlation	
		Assignment:	Practice #1-8	
Wednesday	1/7/2015	Objective:	Trend Lines	
		Assignment:	Practice #1-9	
Thursday	1/8/2015	Objective:	Linear Regression	
		Assignment:	Practice #1-6	
Friday	1/9/2015	Objective:	Quiz	
		Assignment:	None	

BELLwork

Name: _____

Period: _____

Week of _____ - _____

Monday
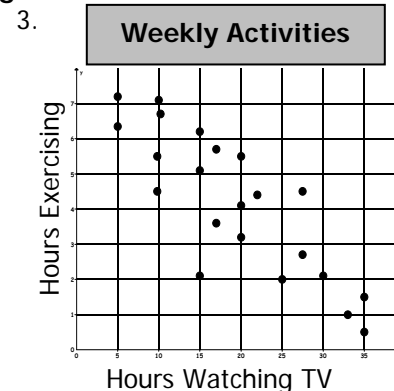
thursday

Tuesday

Friday

Wednesday

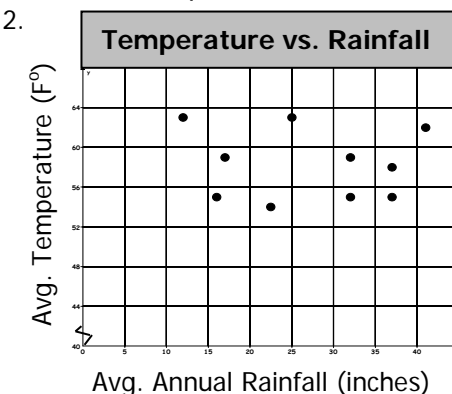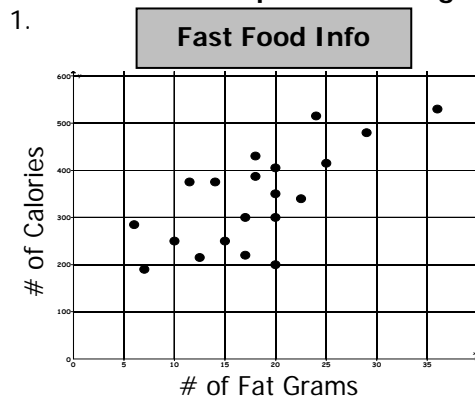## CHALLENGE

Practice – Scatterplots and Correlations   pp 262 - 269

Name _____ Date _____ Period _____

Look at the scatterplots below. Determine if there is a positive, negative, or no correlation between the data. If there is a positive or negative correlation, describe its meaning in the situation.

1.

Fast Food Info

# of Calories

# of Fat Grams

2.

Temperature vs. Rainfall

Avg. Temperature (F°)

Avg. Annual Rainfall (inches)

3.

Weekly Activities

Hours Exercising

Hours Watching TV

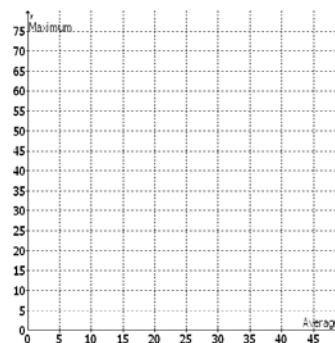| Correlation:	Correlation:	Correlation:
Description of meaning:	Description of meaning:	Description of meaning:

For each of the following, state the correlation the statement represents, then explain why.

4. The length of a baby at birth and the month in which the baby was born.

5. The amount of free time you have and the number of hours you work.

6. The sales of snow shovels and the amount of snowfall.

7. During one month at a local deli, the number of pounds of ham sold decreased as the number of pounds of turkey sold increased.
    A. What type of correlation is this an example of?

    B. Is it reasonable to conclude that the change in turkey sales caused the decrease in ham sales? Explain your answer.

8. The table to the right shows the average and maximum lifespan for some animals.

    A. Plot the data from the table on the graph below.

    B. What type of correlation exists, if any.

    C. Describe the correlation.

Lifespan of Some Animals							
Avg.	12	25	15	8	35	40	41	20
Max.	47	50	40	20	70	77	61	54

Practice –Application of Line of Best Fit   pp 262 – 269
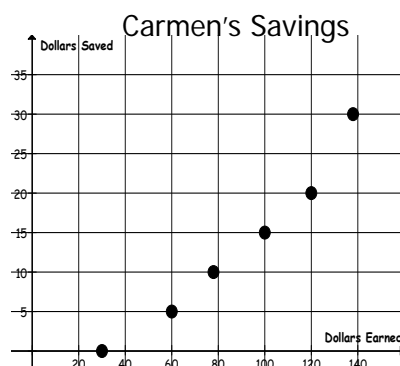
Name _____   Date _____   Period _____

1. The scatterplot shows the relationship between
   the _____
   and the _____ .

2. What type of correlation does the data appear
   to have? _____

3. The scatterplot seems to show that the more
   Carmen earned, _____.

Carmen's Savings

The table below shows the number of bull's-eyes attempted and the number of bull's-eyes made during a few dart games.

4. Create a scatterplot on the graph to the right using the data in the table.

Bull's-eyes		
Name	Attempted	Made
Darlene	5	4
Chris	7	7
Mark	5	3
Kathy	6	3
Jeff	9	6
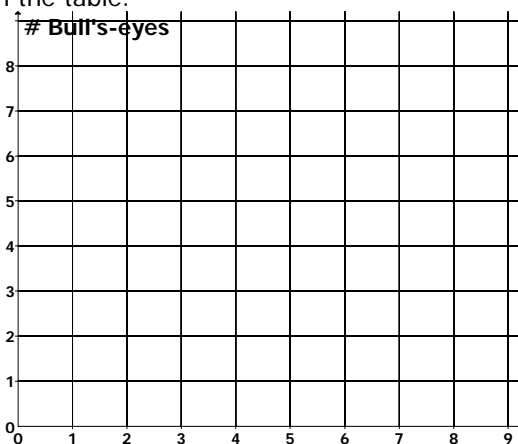
5. What are the ordered pairs in the data set?

6. Describe the relationship between attempts and successes.

7. Jeff tried to guess the ages of famous people. The table below shows Jeff's results.

Actual Age	Guess
15	18
28	25
24	28
42	39
56	50
45	36
80	72
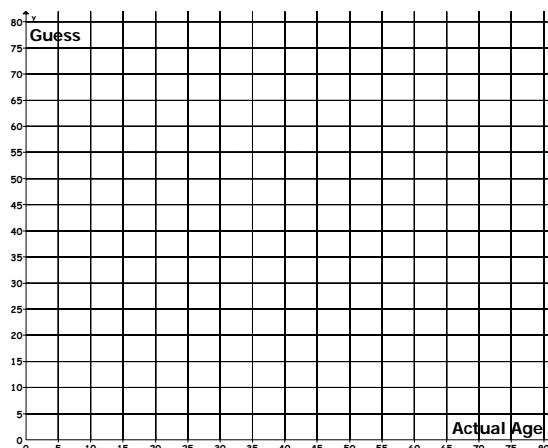
A) Plot these points on the graph.
B) Draw a line of best fit.

C) Draw the perfect guess line.

8. _____ ch month for six months.

   A) What type of correlation is the relationship between the
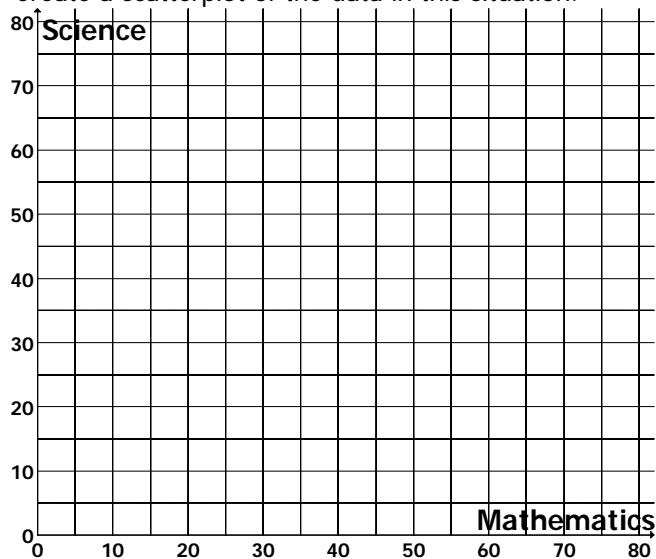   number of guppies and the number of months?

# of Guppies

Month

9. Mr. Smith wanted to see if there was a correlation between his students' test score in his math class and their test score in their science class.

A) Create a scatterplot of the data in this situation.

Mathematics Score	Science Score
60	65
53	65
44	59
61	61
70	67
25	48
37	53
30	55
80	75
75	69

Science

80
70
60
50
40
30
20
10
0
0   10   20   30   40   50   60   70   80

Mathematics

B) Does the scatterplot show a positive or negative correlation?

C) Draw and use trend line to predict the mathematics score corresponding to a science score of 50.

D) Predict the science score corresponding to a mathematics score of 65.

Practice – Application of Linear Regression

Name _____ Date _____ Period _____

Read and answer the following questions. For recording purposes only, round your answer to the nearest hundredth.

1. As a science experiment, Keith recorded the percent humidity and the number of stars he could see at 10:00 P.M. each evening.

Star Counting Experiment										
Humidity (%)	84	76	79	88	95	82	87	88	75	82
Number of Visible Stars	12	22	25	15	11	19	13	18	20	22

   a. Use your calculator to create a scatterplot of the data using the humidity as the independent variable.
   b. Write the equation of the line of best fit.

2. Hummingbird wing beat rates are much higher than those in other birds. Estimates for various species are given in the table.

Hummingbird Wing Beats

Mass (g)	3.1	2.0	3.2	4.0	3.7	1.9	4.5
Wing Beats (per s)	60	85	50	45	55	90	40

   a. Use your calculator to create a scatterplot of the data using mass as the independent variable.
   b. Write the equation of the line of best fit.

   c. Predict the wing beat rate for a Giant Hummingbird with a mass of 6 grams.

3. The table below represents the age of a person, x, and their normal systolic blood pressure, y.

Age	Systolic Blood Pressure
10	115
30	125
50	135
70	145

   a. What equation could be used to determine a person's normal systolic blood pressure?

   b. What is the age of a person when his Systolic Blood Pressure is 161?

4. As scuba divers descend, the pressure of the water increases. Scuba divers can determine their depth by the pressure. Pressure can be expressed in atmospheres. An atmosphere is equivalent to 14.7psi (pounds per square inch) of pressure. The table below shows the relationship between atmospheres of pressure and ocean depth.

Depth of Ocean (feet)	0	33	66	99	132
Pressure (atmosphere)	1	2	3	4	5

a. What equation could represent this situation?

b. What is the depth of the ocean when the atmospheric pressure is 12?

5. The table below lists corresponding x-and y-values of a linear function. What is the value of y when $x = 5$?

x	y
0	3
1	12
2	21
3	30

A 39
B 40
C 48
D 50

6. Nelda is recording the amount of money she has in her savings account at the end of each month. She displayed the results in the scatterplot.

x	y

Number of Months
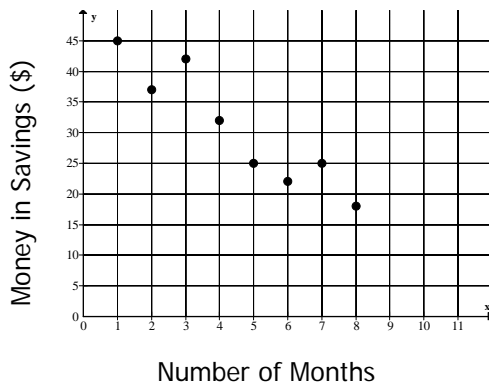
a. Write the equation of the line of best fit and sketch on the graph above.

b. What would be a reasonable estimate of the amount of money in the savings account at 11 months?

Name _____ Date _____ Class _____

Test Preparation Practice
Algebra 1

**A.1.A** Describe independent and dependent quantities in functional relationships.

Solve each problem. Choose the best answer for each question and record your answer on the Student Answer Sheet. Figures are not drawn to scale

1. Hollis owns a farm market. The amount a customer pays for green peppers depends on the number of peppers purchased. Hollis sells 3 peppers for $1.75. What is the independent variable?

   A Price per green pepper

   B Number of green peppers

   C Total price

   D Number of customers

2. A function is described by the equation $f(x) = 2x - 3$. The replacement set for the independent variable is {2, 4, 6, 8}. Which of the following is contained in the corresponding set for the dependent variable?

   F -3

   G -1

   H 8

   J 9

3. A home store is having a 10%-off sale on all in-stock bathroom floor tile. Which statement best represents the functional relationship between the sale price of the tile and the original price?

   A The sale price and the original price are independent of each other.

   B The original price is dependent on the sale price.

   C The sale price is dependent on the original price.

   D The relationship cannot be determined.

4. A balloon is inflated with helium. As helium is added to the balloon, the volume increases until it finally bursts. Identify the independent variable.

   F The amount of helium added to the balloon

   G The size of the balloon

   H The volume of the balloon

   J The balloon bursting

5. A graph shows the amount of money in a savings account over a 10-year period of time. What is the dependent variable?

   A Time in years

   B Number of savings accounts

   C Amount of money in account

   D There is not a dependent variable.

6. A function is described by the equation $f(x) = x^2 - 3$. The replacement set for the independent variable is {1, 3, 5, 7}. Which of the following is contained in the corresponding set for the dependent variable?

   F -6

   G -3

   H 25

   J 46

7. Renee owns a yogurt shop. The amount a customer pays for a yogurt cone depends on the number of scoops of yogurt. Renee sells two scoops for $2.75. What is the independent variable?

   A Number of scoops of yogurt

   B Total price

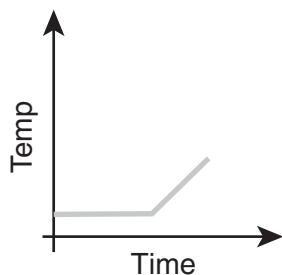   **C** Number of customers

   D Price per scoop of yogurt

Holt Algebra 1

Name _____ Date _____ Class _____

8. Identify the graph that best represents your body temperature as you exercise.

F

Temp / Time

G

Temp / Time

H

Temp / Time

J

Temp / Time
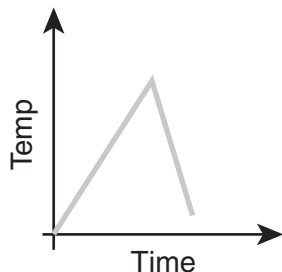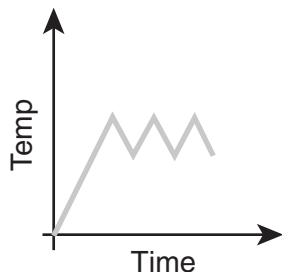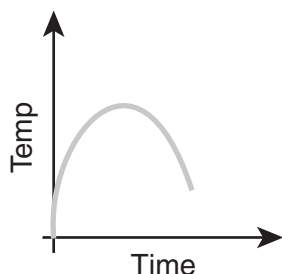
9. Marta jogs a certain distance up a hill at a steady rate for t minutes. What is the dependent variable?

A The height of the hill

B The rate

C t minutes

D Distance jogged

10. For a truck traveling at a speed of 60 mph, the relationship between the distance traveled, d, and the time traveled, t, is described by the function $d = 60t$. Which statement about this relationship is true?

F The speed of the truck depends on the time traveled.

G The speed of the truck depends on the distance traveled.

H The distance traveled depends on the time traveled.

J The time traveled depends on the distance traveled.

11. The area of a triangle is given by the function $A = \frac{1}{2}bh$. Which statement about this relationship is true?

A The area of the triangle depends on the product of the length of the base and one-half.

B The area of the triangle depends on the product of one-half the length of the base times the height.

C The area of the triangle depends on the product of the height and one-half.

D The area of the triangle depends on only the length of the base.

12. A function is described by the equation $f(x) = 3x + 2$. The replacement set for the independent variable is {0, 2, 5, 8}. Which of the following is contained in the corresponding set for the dependent variable?

F -2

G 6

H 17

J 24

Holt Algebra 1