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Rev 2012-13

Scatterplots
"I WILL …establish all sorts of scatter plots."
I. Definitions

A. A _____is a graph with points plotted to show a possible relationship between two sets of data. A scatter plot is an effective way to some types of data.
B. A _____ describes a relationship between two data sets. A graph may show the correlation between data. The correlation can help you analyze trends and make predictions. There are three types of correlations between data.
    1. _____: Positive Slope
    2. _____: Negative Slope
    3. _____: No Slope

II. Trend Lines

A. Create a Quadrant I graph
B. Label the axis and plot the points given
C. Draw a line:
    A. Trend line is a graph where show the correlation between data sets more clearly. It can also be helpful when making predictions based on the data.

III. Steps of Curve Fitting

A. Identify and list all of the data points
B. In the graphs, enter the data using STAT L1 should be the independent variable and L2 should be the dependent variable
C. STAT → CALC → select LinReg (ax + b) to get the equation

IV. Model Problems

Ex 1: "The number of people in an audience and ticket sales." Identify the correlation you would expect to see between the pair of data sets. Explain.	Ex 2: "The number of people in an audience and ticket sales." Identify the correlation you would expect to see between the pair of data sets. Explain.

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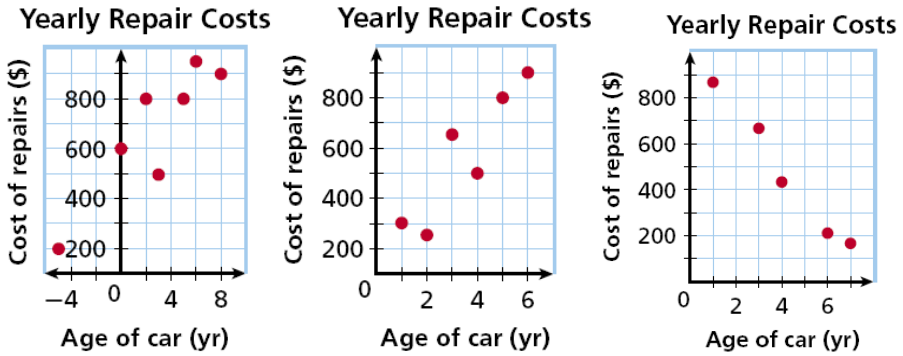
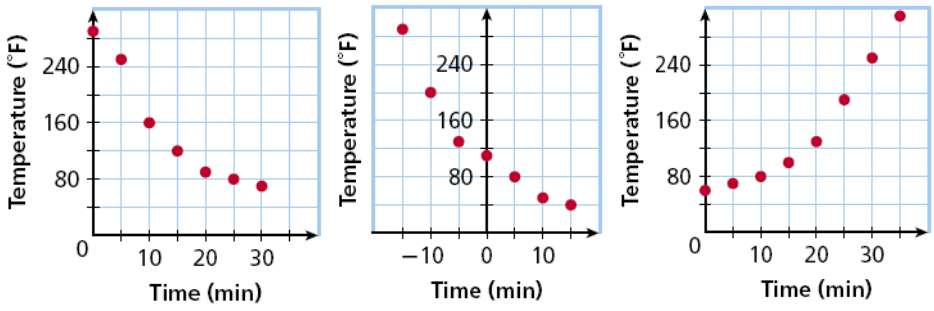
Ex 3: "The temperature in Houston and the number of cars sold in Boston." Identify the correlation you would expect to see between the pair of data sets. Explain.	Your Turn: "The number of times you sharpen your pencil and the length of your pencil." Identify the correlation you would expect to see between the pair of data sets. Explain.

Ex 4: Which graph is the best scatter plot that best represents the relationship between the age of a car and the amount of money spent each year on repairs. Explain.



Your Turn: Which graph is the best scatter plot that best represents the number of minutes since a pie has been taken out of the oven and the temperature of the pie. Explain.



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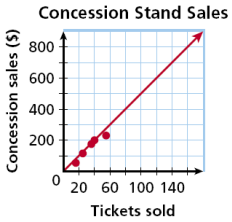
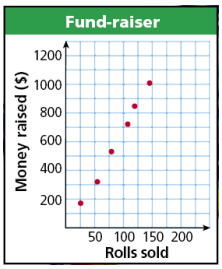
Ex 5: The scatter plot shows a relationship between the total amount of money collected at the concession stand and the total number of tickets sold at a movie theater. Based on this relationship, predict how much money will be collected at the concession stand when 150 tickets have been sold.



Ex 6: A fundraiser is being held for school. Money is raised based on the number of Holiday wrapping paper is sold. For 25 rolls sold, the money raised is $190. For 55 rolls sold, $300 is sold. For 75 rolls sold, $510 is made. For 100 rolls sold, $710 is received. 140 rolls sold, $820 is made. 150 rolls sold for $1,000. Create a trend line and determine how much wrapping paper rolls need to be sold to raise $500.



Your Turn: Neal kept track of the number of minutes it took for him to assemble sandwiches at his restaurant. Determine the correlation, trend line, and predict the time it will take for Neal to assemble 12 sandwiches.

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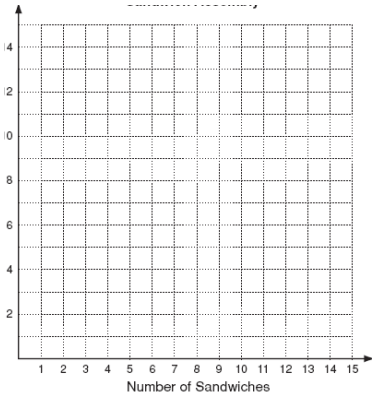
Number of sandwiches	1	2	4	6	7
Minutes	3	4	5	6	7



Ex 7: The table shows the number of participants in U.S. Youth softball during the period of 1997-01.

x	*y*
1997	1.44
1998	1.4
1999	1.411
2000	1.37
2001	1.355

Ex 8: The table shows the median floor area of new single-family houses in the US during 1995-99.

x	*y*
1995	1920
1996	1950
1997	1975
1998	2000
1999	2028

Your Turn: The table shows the living space recommended for pigs of certain weights

Weight	***Area***
40	2.5
60	3
80	3.5
100	4
120	5

Assignment: Worksheet