Classwork: Scatter Plots

I. 1) Define Scatter Plot –

II. Fill in the blanks.
2) For a positive association, as the x-values ____________, the y-values tend to ____________.
3) For a negative association, as the x-values ____________, the y-values tend to ____________.

III. 4) What happens to the x and y values for a non-linear association?

5) What are the steps involved for making your own scatter plot from a set of data?

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**Coached Example**

The scatter plot shows the heights, in inches, of a class of students and their scores on a test. What type of association, if any, is shown by the scatter plot?

![Scatter Plot Diagram]

Do most of the data points resemble a straight line? _____

Do most of the data points resemble a curve? _____

Do the data points appear to be randomly scattered? _____

Since the data points appear _______________, this scatter plot shows that there is __________ association between students' heights and their test scores.
7. Paula has a lemonade stand, which she operates rain or shine. The table below shows the daily high temperature and the number of cups of lemonade she sold each day last week. It rained on Saturday, but it was sunny every other day.

<table>
<thead>
<tr>
<th>Day</th>
<th>Sunday</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily High Temperature (in °F)</td>
<td>84</td>
<td>90</td>
<td>92</td>
<td>87</td>
<td>87</td>
<td>95</td>
<td>93</td>
</tr>
<tr>
<td>Number of Cups Sold</td>
<td>10</td>
<td>30</td>
<td>36</td>
<td>18</td>
<td>20</td>
<td>48</td>
<td>5</td>
</tr>
</tbody>
</table>

A. Create a scatter plot of these data on the grid below. Be sure to title your scatter plot, label each axis, and choose a scale that allows you to plot all the data. (Remember, you can draw a squiggle mark to indicate a break in an axis if you wish.)

![Grid for scatter plot]

B. What type of association, if any, is shown by the scatter plot? If you excluded any outliers, identify them and explain why.

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
Classwork: Scatter Plots

I. 1) Define Scatter Plot – a graph in which ordered pairs of data are plotted.

II. Fill in the blanks.
   2) For a positive association, as the x-values increase, the y-values tend to increase.
   3) For a negative association, as the x-values increase, the y-values tend to decrease.

III. 4) What happens to the x and y values for a non-linear association?
   As the x-values ↑, the y-values ↑, then ✓.

5) What are the steps involved for making your own scatter plot from a set of data?
   1) Make a title, label x and y axes.
   2) Choose a scale for each axis based on the range for each data set.
   3) Plot coordinate points.

Coached Example

The scatter plot shows the heights, in inches, of a class of students and their scores on a test. What type of association, if any, is shown by the scatter plot?

Do most of the data points resemble a straight line? NO
Do most of the data points resemble a curve? NO
Do the data points appear to be randomly scattered? YES

Since the data points appear randomly scattered, this scatter plot shows that there is NO association between students’ heights and their test scores.
7. Paula has a lemonade stand, which she operates rain or shine. The table below shows the daily high temperature and the number of cups of lemonade she sold each day last week. It rained on Saturday, but it was sunny every other day.

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</table>

A. Create a scatter plot of these data on the grid below. Be sure to title your scatter plot, label each axis, and choose a scale that allows you to plot all the data. (Remember, you can draw a squiggle mark to indicate a break in an axis if you wish.)

![Scatter plot of Outdoor Temperature and Lemonade Sales]

B. What type of association, if any, is shown by the scatter plot? If you excluded any outliers, identify them and explain why.

Positive (strong). Outlier \((93.5)\) -> this pt. was excluded because outliers skew (or mess up) the rest of the data. The day it was 93°F, (Saturday) is also the day it rained, so sales were low even though the temp. was high.