Name: Key _____ **Class:** _____

M8-U9: Notes #1 – Scatter Plots **Date:** _____

Vocabulary:

Quantitative vs. Qualitative:

When you conduct a survey, you collect *quantitative* or *qualitative* data.

Type of Date	Quantitative	Qualitative
Description	Has units, can be measured and numerically compared	Describes a category, cannot be measured or numerically compared
Examples	Age: 13 years Weight: 122 lbs Commute: 23 minutes	Hair Color: brown Attitude: optimistic Zip Code: 14526

Notice that even though the zip code is a number, it is not a quantitative variable because it is not a measurement.

Ex: Which set of data would be considered quantitative?

1. Number of years in school
2. How much you like school
3. Your favorite subject in school
4. Your favorite teacher in school

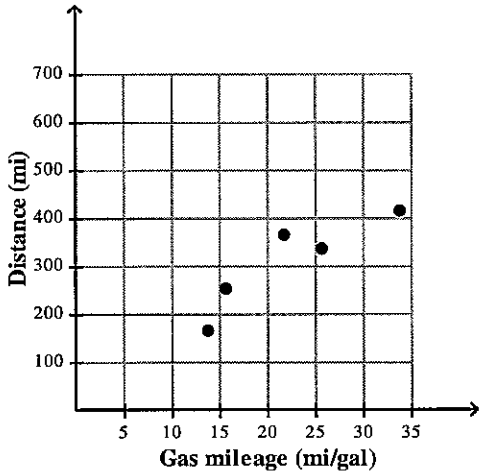
Ex: Which set of data would be considered qualitative?

1. Grades in math class
2. Amount of time spent studying
3. How much you like your math class
4. Test dates in math class

Bivariate data – two sets of quantitative data.

Scatter Plot – a graph that relates two groups of data. Scatter plots represent bivariate data.

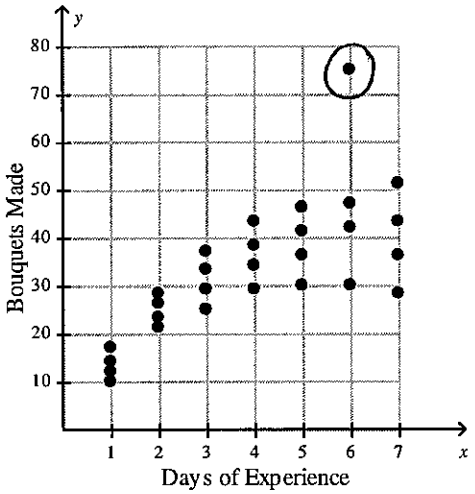
Example:



Clustering – data values occurring close together.

Outlier – a data point with a value that is very different from the other data points in the set.

Example:



What is the outlier of this data set?

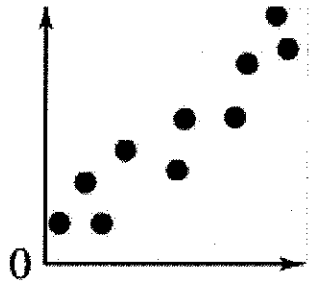
~ (6, 77)

Describe the clustering that you see in the graph.

On the 1st day most ppl. made around the same # of bouquets also true of the 2nd day.

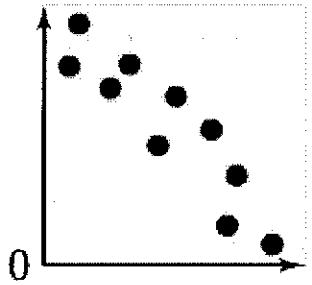
Association – the relationship between two variables that are statistically dependent.

1. **Positive association**



Both sets of data increase together.

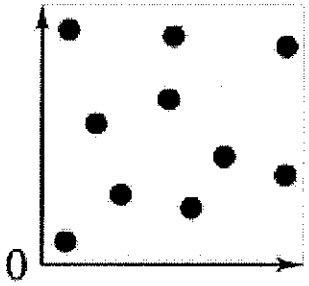
2. **Negative association**



One set of data increases as the other set decreases.

as x goes up, y goes down.

3. **No association**



Sometimes data sets are not related.

Questions:
Would you expect a **positive association**, a **negative association**, or **no association** between the two data sets? Explain why.

1. The amount of free time you have and the number of classes you take

Negative Association

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

Positive Associatin

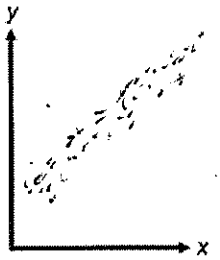
3. Length of a baby at birth and the month in which the baby was born

No association

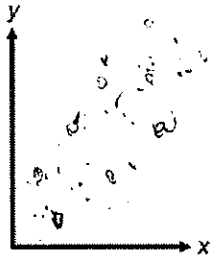
Strong versus Weak Association

Strong Association – the data points cluster in a predictable pattern.

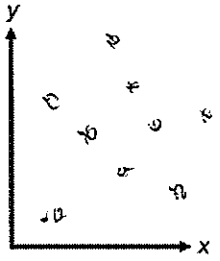
Weak Association – the data points cluster loosely in a pattern that is less predictable.



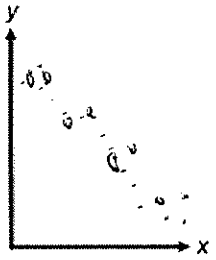
Strong Positive



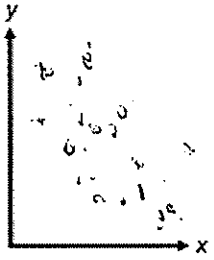
Weak Positive



No Association

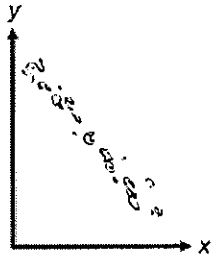


Strong Negative



Weak Negative

Linear versus Nonlinear Association



Strong Linear

Strong Nonlinear