**11.6 Analyzing Data**  
Objective: To calculate measures of central tendency

To draw and interpret box-and-whisker plots

**Measures of Central Tendency**:

**Mean**:   
  
**Median**:

**Mode**:

**\***These are the three most common measures of central tendancy

**Outlier:**

**\***an outlier greatly influences the mean

**Range:**

Find the mean, median, mode and outlier of the following data. How would the mean median and mode be affected if the outlier were removed?

98, 99, 100, 95, 90, 90, 84, 88, 88, 90, 51

51, 84, 88, 88, 90, 90, 90, 95, 98, 99, 100

With Outlier Without Outlier

Mean: Mean:   
Median: Median:

Mode: Mode:   
Outlier: Outlier:

Range: Range:

**Quartiles:**

**Interquartile Range:** difference between the 1st and 3rd quartile

**Box-and-whisker plot:** a way to display data using quartiles, minimums and maximums

Example: 51, 84, 88, 88, 90, 90, 90, 95, 98, 99, 100

Use the data above to create a box-and-whisker plot.

Q1=88

Q2=median=90

Q3=98

The interquartile range is 98-88=10

Example: 51, 84, 88, 88, 90, 90, 90, 95, 98, 99, 100

1. What value is at the 72nd percentile?
2. What value is at the 36th percentile?

**HMWK: page 715 #1-9, 13-17 (odd)**