SECONDARY MATH III
STATISTICS UNIT
WS 12.6 STATISTICAL MEASURES

NAME _____
HOUR _____
DATE _____

4. Sometimes one number can change the results. From #3, change 45 to 50 and redo the problem.

0 8 16 18 19 19 20 20 21 22 25 27 29 33 37 50 54

Determine the five-number summary: (....., ..., ..., ..., ...)

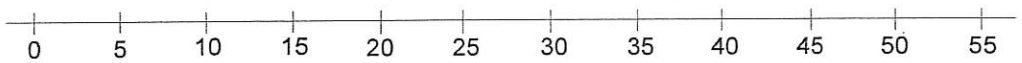
Use the mathematical definition of an outlier to determine if this set of data has an outlier.

Outlier < Q_1 – 1.5 IQR or Outlier > Q_3 + 1.5 IQR

Outlier < ..... or Outlier > .....

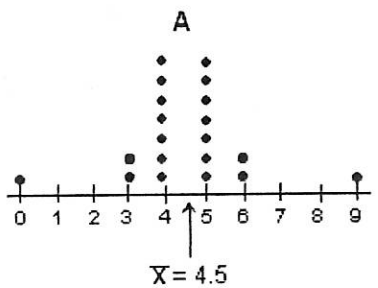
Outlier < ..... or Outlier > .....

What are outliers for this data set? ..... Draw the modified boxplot.

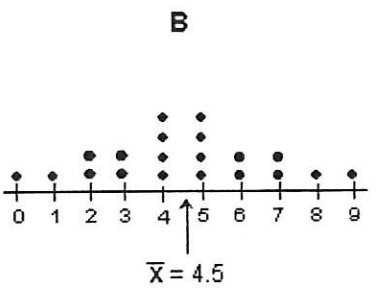


For a set of data points, the ***standard deviation*** measures spread by looking at how far the observations are from their mean. For samples, standard deviation is denoted by s.

For instance, here are some examples. Each graph has a spread of 0 to 9.



Compared to the other two, this data will have the smallest standard deviation because most points are very close to the mean



Compared to the other two, this data will have more deviation than Plot A, but less deviation than Plot C.

s^2 is called the variance.

variance = (standard deviation)^2

Here is the formula for finding the standard deviation:

$$s = \sqrt{\frac{(x_1 - \bar{x})^2 + (x_2 - \bar{x})^2 + \ldots + (x_n - \bar{x})^2}{n-1}} = \sqrt{\frac{\Sigma(x - \bar{x})^2}{n-1}}$$