

Name \_\_\_\_\_  
Mrs. Roubos

Date \_\_\_\_\_  
8A CC Period \_\_\_\_\_

Do Now #1  
Calculating if a Data Value is an Outlier

It may be the case that a data value falls well outside the range of the other values in the set. Such data values are called **outliers** (as they "lie outside" the other values).

Outliers are defined as those data points that fall more than a specified distance from the first or third quartiles. That specified distance is  $1.5 \cdot IQR$  (one and one-half times the IQR). Data points that fall to the far left, or far right, of an ordered data set should be tested as possible outliers.

**Outliers are:**  
greater than  $Q_3 + (1.5 \cdot IQR)$   
(referred to as the **upper fence**)  
or less than  $Q_1 - (1.5 \cdot IQR)$   
(referred to as the **lower fence**)

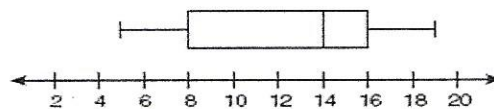
Examples 1-3: Do the following data sets have an outlier?

1) Data Set: {1, 30, 40, 44, 44, 44, 45, 46, 47, 51, 54, 54, 55}

2) Data set: { -3, 5, 10, 12, 14, 18, 24, 26, 49, 60}

3) Data Set: {29, 19, 35, 27, 21, 48, 23, 12, 24, 26, 20, 28, 30, 22, 19, 32, 22}

4) Given the box plot:



Is the value 28 an outlier for this data set?