9.4 Measures of Variation                     Name _____

I understand that in a set of numerical data, the measure of variation describes how its values vary with a single number.
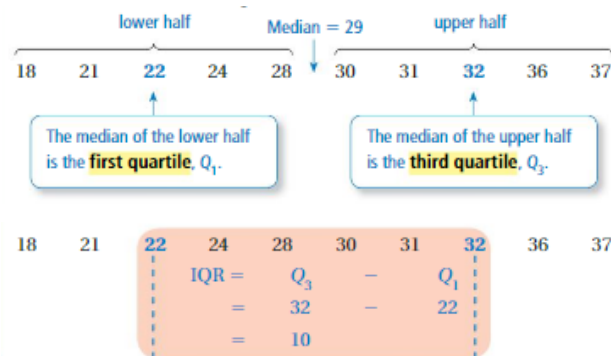
*Notes:*

A **Measure of Variation** – is a measure that describes the <u>distribution </u>of a data set.

The **Range** – of a data set is the difference between the greatest value and the least value.

Data Set:    8, 4, 5, 3, 3, 7

Order the data and find the range:    **3**, 3, 4, 5, 7, **8**      8 – 3 = 5            **Range** is 5

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**Quartiles** of a data set divide the data into four equal parts.  Recall that the median (second quartile) divides the data into two halves.

lower half          Median = 29          upper half

18    21    22    24    28  ▼ 30    31    32    36    37

The median of the lower half is the **first quartile**, $Q_1$.

The median of the upper half is the **third quartile**, $Q_3$.

**Interquartile Range (IQR)** – is the difference between the third quartile and the first quartile.  The IQR represents the range of the middle half of the data, and is a measure of variation.

18    21    **22**    24    28    30    31    **32**    36    37

$IQR =$    $Q_3$    –    $Q_1$

$=$    32    –    22

$=$    10

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Find the range of the data set.  Then find the first quartile, the third quartile, and the IQR.

1)  40, 33, 37, 54, 41, 34, 27, 39, 35

Order the data set:

Range: _____      Median: _____      $Q_1$: _____            $Q_3$: _____            IQR: _____

2)    132, 127, 106, 140, 158, 135, 129, 138

Order the data set:

Range: _____      Median: _____      $Q_1$: _____            $Q_3$: _____            IQR: _____

3)  Choose the set of data from your class's spreadsheet that you used for lesson 9.2.

List the letter of your data: _____

Order the set of data:

Range: _____      Median: _____      $Q_1$: _____            $Q_3$: _____            IQR: _____