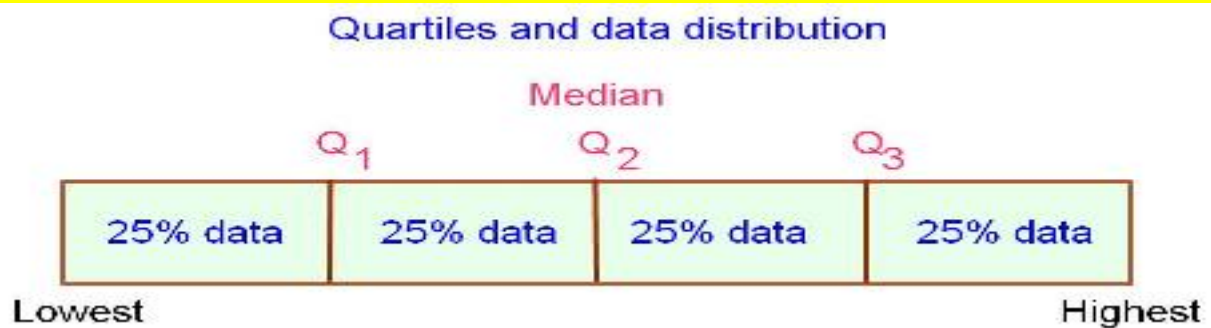




A ***Measure of Variation*** is a measure that describes the distribution of a data set.

Example of a M.of V. is **range**.

Quartiles...divide the data into four equal parts.



The median of the lower half is the **First Quartile (Q_1)**.

The median of the upper half is the **Third Quartile (Q_3)**.

The difference between the third and first quartile is called the **interquartile range (IQR)**.



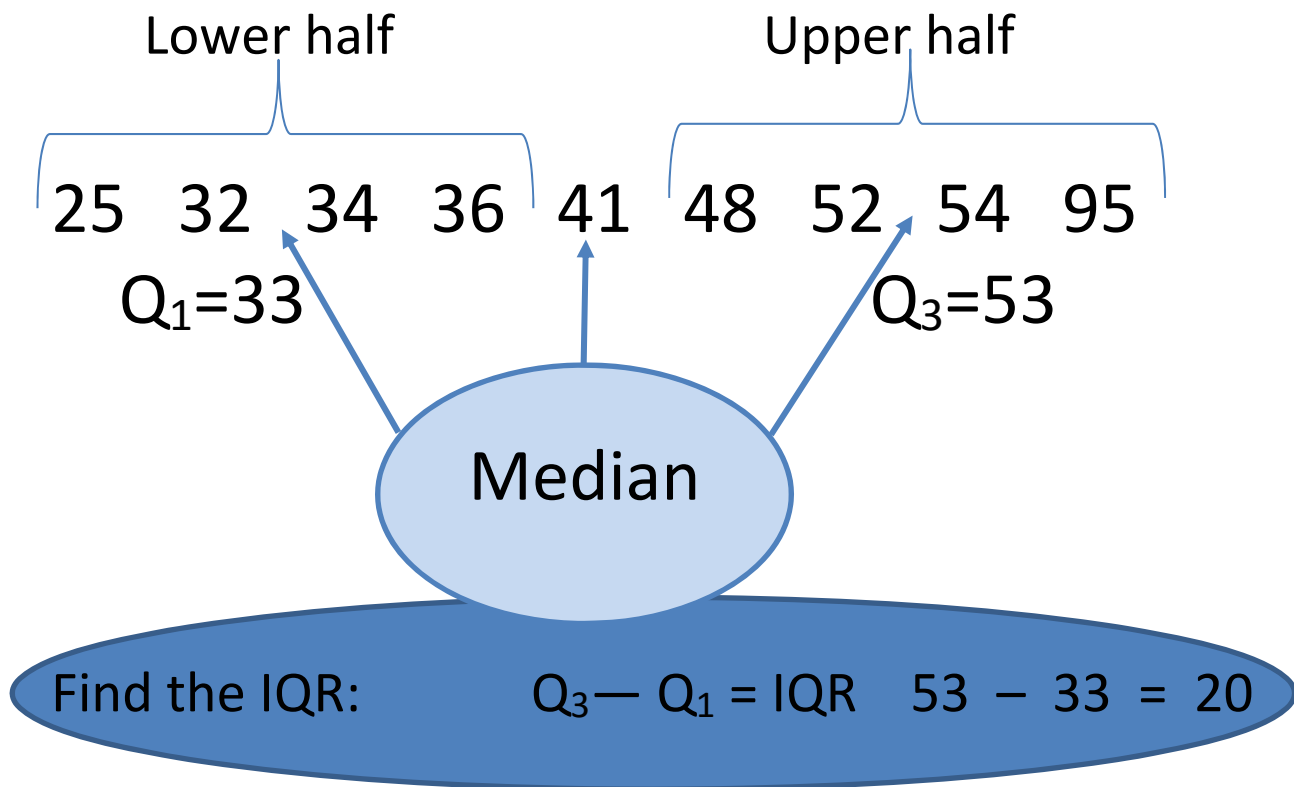
$$Q_3 - Q_1 = \text{IQR}$$



How to use quartiles to check for outliers...

A value less ($<$) than $Q_1 - 1.5$ (IQR) is an outlier.

A value greater ($>$) than $Q_3 + 1.5$ (IQR) is an outlier.



Check for outliers: $Q_1 - 1.5 (IQR)$ $Q_3 + 1.5 (IQR)$
 $33 - 1.5 (20)$ $53 + 1.5 (20)$
 $33 - 30 = 3$ $53 + 30 = 83$

SO, an outlier would have to be less than 3 and greater than 83. 95 qualifies.

<https://www.youtube.com/watch?v=DGAXeX42eoE>
<https://www.youtube.com/watch?v=9aDHbRb4Bf8>
