Mean

$$M = \frac{\sum X_i}{n}$$

- Where X_i = a single score, $\sum X_i$ = sum of all the scores, n = total number of scores

- Notation:
  - *M* = sample mean
  - μ = population mean

Median

- Median location = $\frac{n+1}{2}$ = ____th score
  - For an odd number of scores, the median is the middle score
  - For an even number of scores, the median is the average of the two middle scores

Mode

- The mode is the most frequently occurring score in the distribution

Range

- Range = highest score – lowest score

Interquartile Range (IQR)

- $IQR = Q_3 - Q_1$
- To find Q_1 and Q_3, first find the median of the dataset
  - Q_1 is the median of the first half of the dataset
  - Q_3 is the median of the second half of the dataset

Outliers

- The rule of thumb is that if the score is less than $Q_1 - 1.5(IQR)$ or greater than $Q_3 + 1.5(IQR)$, then we consider it to be an outlier

Standard Deviation

$$s = \sqrt{\frac{\sum(X_i - M)^2}{n-1}} \qquad \sigma = \sqrt{\frac{\sum(X_i - \mu)^2}{n}}$$

- $\sum(X_i - M)^2$ is sum of squared deviations of each score from the mean; it is called sum of squares (SS)

Variance

$$s^2 = \frac{\sum(X_i - M)^2}{n - 1} \qquad \sigma^2 = \frac{\sum(X_i - \mu)^2}{n}$$

- The variance is the standard deviation squared (or the standard deviation is the square root of the variance)