Population Standard Deviation (σ) and Variance (σ^2):

Standard deviation: (σ)

$$\sigma = \sqrt{\frac{\sum_{i-1}^{N}(x_i - \mu)^2}{N}}$$

x_i = each individual data pt.

variance (σ^2)

$$\sigma^2 = \frac{\sum_{i=1}^{N}(x_i - \mu)^2}{N}$$

N = the # of data pts. in the population

μ = the mean of the population.

Sample Standard Deviation (s) and Variance (s^2):

Sample Standard Deviation: (s)

$$S = \sqrt{\frac{\sum_{i=1}^{n}(x_i - \bar{x})^2}{n-1}}$$

Sample variance: (s^2)

$$s^2 = \frac{\sum_{i=1}^{n}(x_i - \bar{x})^2}{n-1}$$

x_i = each individual data point.

n = the # of data points in the sample.

$\bar{x}$ = the mean of the sample.