

Statistics Reference Sheet

Mean (Average)

$$\bar{x} = \frac{\sum x}{n}$$

x = All items in sample

n = # of items in sample

Standard Deviation

Sample S.D.

$$s = \sqrt{\frac{\sum (x - \bar{x})^2}{n - 1}}$$

Population S.D.

$$\sigma = \sqrt{\frac{\sum (x - \bar{x})^2}{n}}$$

Z-Score

$$Z = \frac{x - \mu}{\delta}$$

Percentile of value x

$$P = \frac{\# \text{ of values less than } x}{\text{total } \# \text{ of values}} * 100$$

Least Squares Regression Line

$$\hat{y} = ax + b$$

$$a = \frac{n \sum xy - (\sum x)(\sum y)}{n \sum x^2 - (\sum x)^2}$$

$$b = \hat{y} - a\hat{x}$$

Correlation Coefficient

$$r = \frac{n(\sum xy) - (\sum x)(\sum y)}{\sqrt{n(\sum x^2) - (\sum x)^2} * \sqrt{n(\sum y^2) - (\sum y)^2}}$$