Descriptive Statistics:

\[ \bar{x} = \frac{\sum x}{n} \]

\[ R = \text{maximum} - \text{minimum} \]

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

\[ z = \frac{x - \mu}{\sigma} \quad \text{or} \quad z = \frac{x - \bar{x}}{s} \]

\[ \text{IQR} = Q_3 - Q_1 \]

Lower fence = \( Q_1 - 1.5(\text{IQR}) \)
Upper fence = \( Q_3 + 1.5(\text{IQR}) \)

Correlation & Regression:

The equation of the least-squares regression line is \( \hat{y} = b_0 + b_1 x \), where \( \hat{y} \) is the predicted value, \( b_0 \) is the \( y \)-intercept, and \( b_1 \) is the slope.

Residual = Observed \( y \) – Predicted \( y = y - \hat{y} \)

Probability:

\[ n \text{C}_r = \frac{n!}{r! (n - r)!} \]