Chapter 3 Formula Sheet

$Q(p) = Q\left(\frac{i-.5}{n}\right) = x_i$ for n data points $x_1 \leq x_2 \leq \cdots \leq x_n$

$i = np + .5$ to find the index i of $Q(p)$ in n ordered data points

$IQR = Q(.75) - Q(.25)$

plot points $(x_i, Q(\dfrac{i-.5}{n}))$ to make a probability plot (for ordered x_i)

$$\bar{x} = \frac{1}{n}\sum_{i=1}^{n} x_i \quad \text{and} \quad \mu = \frac{1}{N}\sum_{i=1}^{N} x_i$$

$R = x_n - x_1$ in n ordered data points

$$s^2 = \frac{1}{n-1}\sum_{i=1}^{n}(x_i - \bar{x})^2 \quad \text{and} \quad \sigma^2 = \frac{1}{N}\sum_{i=1}^{N}(x_i - \mu)^2$$

$$\hat{p} = \frac{\text{The number of items in the sample with the characteristic}}{n}$$

$$\hat{u} = \frac{\text{The total number of occurrences}}{\text{The total number of inspection units or sampled items}}$$