FORMULAS TEST 2

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

$$z = \frac{x - m}{s} \qquad X = m + zs$$

$$z = \frac{\bar{x} - m}{s \ / \sqrt{n}} \qquad \bar{X} = m + z(s \ / \sqrt{n})$$

$$MedianRank = \frac{n+1}{2} \qquad QuartileRank = \frac{[MedianRank]+1}{2}$$

$$IQR = Q3 - Q1 \qquad InnerFences = Q \pm 1.5 * IQR \qquad OuterFences = Q \pm 3 * IQR$$

Probability Laws

P(A or B) = P(A) + P(B) **if A and B are disjoint**

P(A and B) = P(A) x P(B | A)

P(B | A) = P(A and B) / P(A) **if** $P(A) \neq 0$

If A and B are statistically independent, P (A and B) = P(A) x P(B)

Confidence Interval and Sample Size Determination for μ

$$\bar{X} \pm z^*(s/\sqrt{n}) \qquad n = \left(\frac{z^* s}{m}\right)^2$$ where m = margin of error