

Formula List

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

$$E(X^2) - \mu^2$$

$$\frac{\sum_{i=1}^n [(x_i - \bar{x})(y_i - \bar{y})]}{\sqrt{[\sum_{i=1}^n (x_i - \bar{x})^2][\sum_{i=1}^n (y_i - \bar{y})^2]}}$$

$$\frac{\text{Cov}(X,Y)}{\sqrt{\text{Var}(X)}\sqrt{\text{Var}(Y)}}$$

$$\binom{n}{x} p^x (1-p)^{n-x}, x = 0, 1, 2, \dots, n$$

$$\frac{\lambda^x}{x!} e^{-\lambda}, x = 0, 1, \dots$$

$$1 - e^{-\lambda x}, x > 0$$

$$E(XY) - \mu_x \mu_y$$

$$P\left(Z \leq \frac{x+0.5-np}{\sqrt{np(1-p)}}\right)$$

$$\frac{x^{\alpha-1}e^{-x/\beta}}{\beta^{\alpha}\Gamma(\alpha)}$$

$$\sum_{i=1}^n a_i^2 \text{Var}(X_i) + 2 \sum_{i < j} a_i a_j \text{Cov}(X_i, X_j)$$

$$\frac{s}{\sqrt{n}}$$

$$\sqrt{\frac{\hat{p}(1-\hat{p})}{n}}$$

$$\sqrt{\frac{\hat{p}_1(1-\hat{p}_1)}{m} + \frac{\hat{p}_2(1-\hat{p}_2)}{n}}$$

$$\sqrt{\frac{s_1^2}{m} + \frac{s_2^2}{n}}$$

$$\sqrt{\frac{(m-1)s_1^2 + (n-1)s_2^2}{m+n-2} \left(\frac{1}{m} + \frac{1}{n}\right)}$$

$$\text{integer part of } \frac{(s_1^2/m + s_2^2/n)^2}{\frac{(s_1^2/m)^2}{m-1} + \frac{(s_2^2/n)^2}{n-1}}$$

$$\text{estimate} \pm (\text{c.v.})(\text{e.s.e.})$$

$$\frac{\text{estimate} - \text{param. value under } H_0}{\text{e.s.e. or (s.e. under } H_0)}$$