Formula List

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

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

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

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

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

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

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

$$E(XY)-\mu_X\mu_Y$$

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

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

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

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

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

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

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

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

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

estimate $\pm$ (c.v.)(e.s.e.)

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