Formulário

$P(E_1|B) = \frac{P(B|E_1)P(E_1)}{P(B|E_1)P(E_1)+P(B|E_2)P(E_2)+...+P(B|E_k)P(E_k)}$

$\mu = E(X) = \sum_x xf(x) \qquad \sigma^2 = V(X) = \sum_x x^2 f(x) - \mu^2 \qquad \sigma = \sqrt{V(X)}$

$f(x) = \frac{1}{b-a+1} \qquad E(X) = (b+a)/2 \qquad V(X) = \frac{(b-a+1)^2-1}{12}$

$f(x) = \binom{n}{x} p^x (1-p)^{n-x} \qquad E(X) = np \qquad V(X) = np(1-p)$

$f(x) = (1-p)^{x-1}p \qquad E(X) = \frac{1}{p} \qquad V(X) = \frac{(1-p)}{p^2}$

$f(x) = \frac{\binom{K}{x}\binom{N-K}{n-x}}{\binom{N}{n}} \qquad E(X) = np \qquad V(X) = np(1-p)\left(\frac{N-n}{N-1}\right) \qquad p = \frac{K}{N}$

$f(x) = \frac{e^{-\lambda}\lambda^x}{x!} \qquad E(X) = \lambda \qquad V(X) = \lambda$

$\mu = E(X) = \int_{-\infty}^{\infty} xf(x)\,dx \qquad \sigma^2 = V(X) = \int_{-\infty}^{\infty} x^2 f(x)\,dx - \mu^2$

$f(x) = \frac{1}{(b-a)} \qquad E(X) = \frac{a+b}{2} \qquad V(X) = \frac{(b-a)^2}{12}$

$f(x) = \frac{1}{\sqrt{2\pi}\sigma} e^{\frac{-(x-\mu)^2}{2\sigma^2}} \qquad E(X) = \mu \qquad V(X) = \sigma^2$

$f(x) = \lambda e^{-\lambda x} \qquad E(X) = \frac{1}{\lambda} \qquad V(X) = \frac{1}{\lambda^2}$

$cov(X,Y) = E(XY) - \mu_X\mu_Y \qquad \rho_{XY} = \frac{cov(X,Y)}{\sqrt{V(X)V(Y)}}$

$\bar{X} = \frac{\sum_{i=1}^n X_i}{n} \qquad S^2 = \frac{\sum_{i=1}^n (X_i - \bar{X})^2}{n-1}$

$MSE(\hat{\Theta}) = E((\hat{\Theta} - E(\hat{\Theta}))^2) + (\theta - E(\hat{\Theta}))^2$

$\frac{\bar{X}-\mu}{\sigma/\sqrt{n}} \sim N(0,1) \qquad \frac{\bar{X}-\mu}{s/\sqrt{n}} \sim t_{n-1} \qquad \frac{(n-1)S^2}{\sigma^2} \sim \chi^2_{n-1}$

$\bar{x} - z_{\alpha/2}\frac{\sigma}{\sqrt{n}} \le \mu \le \bar{x} + z_{\alpha/2}\frac{\sigma}{\sqrt{n}} \qquad \bar{x} - t_{\alpha/2,n-1}\frac{s}{\sqrt{n}} \le \mu \le \bar{x} + t_{\alpha/2,n-1}\frac{s}{\sqrt{n}}$

$\frac{(n-1)s^2}{\chi^2_{\alpha/2,n-1}} \le \sigma^2 \le \frac{(n-1)s^2}{\chi^2_{1-\alpha/2,n-1}}$

$$\text{valor-}p = \begin{cases} 2[1-\Phi(|z_0|)], & H_1 : \mu \neq \mu_0 \\ 1-\Phi(z_0), & H_1 : \mu > \mu_0 \\ \Phi(z_0), & H_1 : \mu < \mu_0 \end{cases}$$

$$\beta = \begin{cases} \Phi\left(z_{\alpha/2} - \frac{\delta\sqrt{n}}{\sigma}\right) - \Phi\left(-z_{\alpha/2} - \frac{\delta\sqrt{n}}{\sigma}\right), & H_1 : \mu \neq \mu_0 \\ \Phi\left(z_\alpha - \frac{\delta\sqrt{n}}{\sigma}\right), & H_1 : \mu > \mu_0 \\ \Phi\left(z_\alpha + \frac{\delta\sqrt{n}}{\sigma}\right), & H_1 : \mu < \mu_0 \end{cases}$$