- Вероватноћа:

$P(B) = P(A_1) \cdot P(B|A_1) + \cdots + P(A_n) \cdot P(B|A_n)$

$P(A_i|B) = \frac{P(A_i) \cdot P(B|A_i)}{P(A_1) \cdot P(B|A_1) + \cdots + P(A_n) \cdot P(B|A_n)}$

- Биномна расподела:

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

- Пуасонова расподела:

$f(x) = \frac{e^{-\lambda}\lambda^x}{x!}, x = 0, 1, 2, \ldots$

- Интервали поверења:

$I_\mu = \left(\bar{X} - z_{\alpha/2}\frac{\sigma}{\sqrt{n}}, \bar{X} + z_{\alpha/2}\frac{\sigma}{\sqrt{n}}\right)$

$I_\mu = \left(\bar{X} - t_{\alpha/2}\frac{S}{\sqrt{n}}, \bar{X} + t_{\alpha/2}\frac{S}{\sqrt{n}}\right)$

$I_{\sigma^2} = \left(\frac{(n-1)S^2}{\chi^2_{1-\frac{\alpha}{2}}}, \frac{(n-1)S^2}{\chi^2_{\frac{\alpha}{2}}}\right)$

$I_p = \left(\bar{X} - z_{\alpha/2}\sqrt{\frac{\bar{X}(1-\bar{X})}{n}}, \bar{X} + z_{\alpha/2}\sqrt{\frac{\bar{X}(1-\bar{X})}{n}}\right)$

$I_{p_1-p_2} = (\bar{X}_1 - \bar{X}_2 \pm z_{\alpha/2}\sqrt{\frac{\bar{X}_1(1-\bar{X}_1)}{n_1} + \frac{\bar{X}_2(1-\bar{X}_2)}{n_2}})$

$I_{\mu_1-\mu_2} = \left(\bar{X}_1 - \bar{X}_2 - t_{\alpha/2}S_z\sqrt{\frac{1}{n_1} + \frac{1}{n_2}}, \bar{X}_1 - \bar{X}_2 + t_{\alpha/2}S_z\sqrt{\frac{1}{n_1} + \frac{1}{n_2}}\right)$

$I_{\mu_1-\mu_2} = \left(\bar{X}_1 - \bar{X}_2 - t_{\alpha/2}\sqrt{\frac{S_1^2}{n_1} + \frac{S_2^2}{n_2}}, \bar{X}_1 - \bar{X}_2 + t_{\alpha/2}\sqrt{\frac{S_1^2}{n_1} + \frac{S_2^2}{n_2}}\right)$

$I_{\mu_1-\mu_2} = \left(\bar{D} - t_{\alpha/2}\frac{S_D}{\sqrt{n}}, \bar{D} - t_{\alpha/2}\frac{S_D}{\sqrt{n}}\right)$

$I_{\mu_{Y|x_0}} = \left(\hat{\mu}_{Y|x_0} - t_{\alpha/2}\hat{\sigma}\sqrt{\frac{1}{n} + \frac{(x_0-\bar{x})^2}{S_{xx}}}, \hat{\mu}_{Y|x_0} + t_{\alpha/2}\hat{\sigma}\sqrt{\frac{1}{n} + \frac{(x_0-\bar{x})^2}{S_{xx}}}\right)$

$I_{Y|x_0} = \left(\hat{Y}|x_0 - t_{\alpha/2}\hat{\sigma}\sqrt{1 + \frac{1}{n} + \frac{(x_0-\bar{x})^2}{S_{xx}}}, \hat{Y}|x_0 + t_{\alpha/2}\hat{\sigma}\sqrt{1 + \frac{1}{n} + \frac{(x_0-\bar{x})^2}{S_{xx}}}\right)$

- Тест статистике:

$T_0 = \frac{\bar{X}-\mu_0}{S}\sqrt{n}$

$\chi_0^2 = \frac{(n-1)S^2}{\sigma_0^2}$

$Z_0 = \frac{\bar{X}-p_0}{\sqrt{p_0(1-p_0)}}\sqrt{n}$

$Z_0 = \frac{(\bar{X}_2-\bar{X}_2)-(p_1-p_2)_0}{\sqrt{\bar{X}_1(1-\bar{X}_1)/n_1+\bar{X}_2(1-\bar{X}_2)/n_2}}$

$F_0 = \frac{S_1^2}{S_2^2}$

$T_0 = \frac{(\bar{X}_2-\bar{X}_2)-0}{S_z\sqrt{\frac{1}{n_1}+\frac{1}{n_2}}}, S_z^2 = \frac{(n_1-1)S_1^2+(n_2-1)S_2^2}{n_1+n_2-2}$

$T_0 = \frac{\bar{X}_1-\bar{X}_2-0}{\sqrt{\frac{S_1^2}{n_1}+\frac{S_2^2}{n_2}}}, \nu = \frac{\left(\frac{S_1^2}{n_1}+\frac{S_2^2}{n_2}\right)^2}{\left(\frac{S_1^2}{n_1}\right)^2/(n_1-1)+\left(\frac{S_2^2}{n_2}\right)^2/(n_2-1)}$

$T_0 = \frac{\bar{D}}{S_D}\sqrt{n}$

$$X_0^2 = \sum_{\text{po svim poljima}} \frac{(\hat{E}_{ij} - n_{ij})^2}{\hat{E}_{ij}}$$

Q_+ број позитивних разлика

$W_+ = \sum R_i, W_- = |\sum R_i|$

$W_m = \sum R_i$

$H = \frac{12}{n(n+1)}\sum_{i=1}^k \frac{R_i^2}{n_i} - 3(n+1)$

$S = \frac{12}{bk(k+1)}\sum_{i=1}^k \left(R_i - \frac{b(k+1)}{2}\right)^2$

- Линеарна регресија:

$S_{yy} = \sum(y-\bar{y})^2 = \sum y^2 - n\bar{y}^2$

$S_{xx} = \sum(x-\bar{x})^2 = \sum x^2 - n\bar{x}^2$

$S_{xy} = \sum(x-\bar{x})(y-\bar{y}) = \sum xy - n\bar{x}\bar{y}$

$B = \frac{S_{xy}}{S_{xx}}$

$SSE = S_{yy} - BS_{xy}$

$\hat{\sigma} = \sqrt{\frac{\text{SSE}}{n-2}}$

$\hat{\beta} = \frac{\frac{1}{n}\sum xY - \bar{x}\bar{Y}}{\frac{1}{n}\sum x^2 - \bar{x}^2} = \frac{S_{xy}}{S_{xx}}$

$\hat{\alpha} = \bar{Y} - \hat{\beta}x$

$T_0 = \frac{B}{\hat{\sigma}}\sqrt{S_{xx}}$

- Коваријација:

$\widehat{\text{Cov}(X,Y)} = \frac{\sum(X-\bar{X})(Y-\bar{Y})}{n-1} = \frac{S_{xy}}{n-1}$

- Коефицијент корелације:

$R = \frac{S_{xx}}{\sqrt{S_{xx}S_{yy}}}$

- Једнофакторска дисперзиона анализа:

$$SST = \sum_{i=1}^k \sum_{j=1}^{n_i} X_{ij}^2 - \frac{T_{..}^2}{n}$$

$$SSG = \sum_{i=1}^k \frac{T_{i.}^2}{n_i} - \frac{T_{..}^2}{n}$$

$SSE = SST - SSG$

$MSG = \frac{SSG}{k-1}$

$MSE = \frac{SSE}{n-k}$

$F_0 = \frac{MSG}{MSE}$

- Бонферонијев T тест:

$T_0 = \frac{|\bar{X}_{i.} - \bar{X}_{j.}|}{\sqrt{MSE\left(\frac{1}{n_i}+\frac{1}{n_j}\right)}}$

- Шефеов метод:

$$\sum_{i=1}^k a_i\bar{X}_{i.} - L \leq \sum_{i=1}^k a_i\mu_i \leq \sum_{i=1}^k a_i\bar{X}_{i.} + L$$

$L = (k-1)f_\alpha MSE\sum_{i=1}^k \frac{a_i^2}{n_i}$

- Комплетан блок систем:

$SSG = \sum_{i=1}^k \frac{T_{i.}^2}{b} - \frac{T_{..}^2}{kb}$

$SSB = \sum_{j=1}^b \frac{T_{.j}^2}{k} - \frac{T_{..}^2}{kb}$

$SST = \sum_{i=1}^k \sum_{j=1}^b X_{ij}^2 - \frac{T_{..}^2}{kb}$

$SSE = SST - SSG - SSB$

$MSG = \frac{SSG}{k-1}$

$MSB = \frac{SSB}{b-1}$

$MSE = \frac{SSE}{(k-1)(b-1)}$