VZORCE ZO ŠTATISTIKY

$$\bar{x}_H = \frac{n}{\sum_{i=1}^{n} \frac{1}{x_i}}$$

$$\bar{x}_H = \frac{\sum_{j=1}^{k} n_j}{\sum_{j=1}^{k} \frac{n_j}{x_j}}$$

$$\bar{x}_G = \sqrt[n]{\prod_{i=1}^{n} x_i}$$

$$\bar{x}_G = \sqrt[n]{\prod_{j=1}^{k} x_j^{n_j}}$$

$$\hat{x} = a_{\hat{x}} + \frac{d_0}{d_0 + d_1} h_{\hat{x}}$$

$$Q_k^{\alpha} = a_{Q_k^{\alpha}} + \frac{\frac{k}{\alpha} \cdot n - N_{Q_k^{\alpha}-1}}{n_{Q_k^{\alpha}}} \cdot h_{Q_k^{\alpha}}$$

$$R = x_{\max} - x_{\min}$$

$$R_Q^4 = Q_3^4 - Q_1^4$$

$$Q^4 = \frac{R_Q^4}{2}$$

$$\bar{d} = \frac{1}{n} \sum_{i=1}^{n} | x_i - \bar{x} |$$

$$\bar{d} = \frac{1}{n} \sum_{j=1}^{k} | x_j - \bar{x} | n_j$$

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

$$s^2 = \frac{1}{n} \sum_{j=1}^{k} (x_j - \bar{x})^2 n_j$$

$$s^2 = \overline{x^2} - \bar{x}^2$$

$$s = \sqrt{s^2}$$

$$Sp = \frac{\bar{x} - \hat{x}}{s}$$

$$S_Q = \frac{(x_{0,75} - x_{0,50}) - (x_{0,50} - x_{0,25})}{(x_{0,75} - x_{0,50}) + (x_{0,50} - x_{0,25})}$$

$$\mu_k = \frac{\sum_{i=1}^{n} (x_i - \bar{x})^k}{n}$$

$$\gamma_1 = \frac{\mu_3}{s^3}$$

$$\gamma_2 = \frac{\mu_4}{s^4} - 3$$

....

$$F(x) = P(X \le x)$$

$$F(x_p) = p$$

$$P(a < X < b) = F(b) - F(a) = \int_a^b f(x)dx$$

$$\Phi(-z) = 1 - \Phi(z)$$

$$\tilde{s}^2 = \frac{1}{n-1} \cdot \sum_{i=1}^{n} (x_i - \bar{x})^2$$

$$\tilde{s}^2 = \frac{n}{n-1} \cdot s^2$$

$$est(\mu) = \bar{x}$$

$$est(\sigma^2) = \tilde{s}^2$$

$$est(\pi) = p$$

$$P\left(\bar{x} - z_{1-\frac{\alpha}{2}} \frac{\sigma}{\sqrt{n}} < \mu < \bar{x} + z_{1-\frac{\alpha}{2}} \frac{\sigma}{\sqrt{n}}\right) = 1 - \alpha$$

$$P\left(\bar{x} - t_{1-\frac{\alpha}{2}} \frac{\tilde{s}}{\sqrt{n}} < \mu < \bar{x} + t_{1-\frac{\alpha}{2}} \frac{\tilde{s}}{\sqrt{n}}\right) = 1 - \alpha$$

$$P\left(\frac{(n-1) \cdot \tilde{s}^2}{\chi^2_{1-\frac{\alpha}{2}}} < \sigma^2 < \frac{(n-1) \cdot \tilde{s}^2}{\chi^2_{\frac{\alpha}{2}}}\right) = 1 - \alpha$$

$$P(p - z_{1-\frac{\alpha}{2}} \cdot \sqrt{\frac{p(1-p)}{n}} < \pi < p + z_{1-\frac{\alpha}{2}} \cdot \sqrt{\frac{p(1-p)}{n}}) = 1 - \alpha$$

$$Z = \frac{\bar{X} - \mu_0}{\frac{\sigma}{\sqrt{n}}}$$

$$t = \frac{\bar{x} - \mu_0}{\frac{\tilde{s}}{\sqrt{n}}}$$

$$W_1 = \frac{(n-1) \cdot \tilde{s}^2}{\sigma_0^2}$$

$$z = \frac{p - \pi_0}{\sqrt{\frac{\pi_0 \cdot (1 - \pi_0)}{n}}}$$

....

$$\sum_{i=1}^{n} y_i = nb_0 + b_1 \sum_{i=1}^{n} x_i$$
$$\sum_{i=1}^{n} y_i x_i = b_0 \sum_{i=1}^{n} x_i + b_1 \sum_{i=1}^{n} x_i^2$$

$$b_1 = \frac{\overline{xy} - \bar{x}\,\bar{y}}{\overline{x^2} - \bar{x}^2}$$

$$b_0 = \bar{y} - b_1 \bar{x}$$

$$\text{cov xy} = \frac{1}{n} \sum_{i=1}^{n} (x_i - \bar{x})(y_i - \bar{y}) = \overline{xy} - \bar{x}.\bar{y}$$

$$b_1 = \frac{\text{cov}\, xy}{s_x^2}$$

$$r_{xy} = \frac{\text{cov}\, xy}{s_x s_y}$$

$$Q = \frac{(ab)(\alpha\beta) - (a\beta)(\alpha b)}{(ab)(\alpha\beta) + (a\beta)(\alpha b)}$$

$$R_{XY} = \frac{n \cdot (ab) - (a)(b)}{\sqrt{(a)(b)(\alpha)(\beta)}}$$

$$\bar{y}_{ch} = \frac{\frac{y_1}{2} + y_2 + \ldots + y_{T-1} + \frac{y_T}{2}}{T-1}$$

$$\bar{y}_{ch} = \frac{\frac{y_1+y_2}{2} d_2 + \frac{y_2+y_3}{2} d_3 + \ldots + \frac{y_{T-1}+y_T}{2} d_T}{d_2 + d_3 + \ldots + d_T}$$

$$\bar{\Delta} = \frac{y_T - y_1}{T-1}$$

$$\bar{k} = \sqrt[T-1]{\frac{y_T}{y_1}}$$

$$\sum_{t=1}^{T} y_t = T\, b_0 + b_1 \sum_{t=1}^{T} t$$
$$\sum_{t=1}^{T} t\, y_t = b_0 \sum_{t=1}^{T} t + b_1 \sum_{t=1}^{T} t^2$$

$$b_1 = \frac{\sum_{t=1}^{T} t\, y_t}{\sum_{t=1}^{T} t^2}$$

$$b_0 = \frac{\sum_{t=1}^{T} y_t}{T}$$

$$\sum_{t=1}^{T} y_t = T\, b_0 + b_1 \sum_{t=1}^{T} t + b_2 \sum_{t=1}^{T} t^2$$
$$\sum_{t=1}^{T} t\, y_t = b_0 \sum_{t=1}^{T} t + b_1 \sum_{t=1}^{T} t^2 + b_2 \sum_{t=1}^{T} t^3$$
$$\sum_{t=1}^{T} t^2\, y_t = b_0 \sum_{t=1}^{T} t^2 + b_1 \sum_{t=1}^{T} t^3 + b_2 \sum_{t=1}^{T} t^4$$

$$\sum_{t=1}^{T} \ln y_t = T\, b_0 + b_1 \sum_{t=1}^{T} t$$
$$\sum_{t=1}^{T} t \cdot \ln y_t = b_0 \sum_{t=1}^{T} t + b_1 \sum_{t=1}^{T} t^2$$

$$MSE = \frac{1}{T-p} \sum_{t=1}^{T} e_t^{\,2}$$
$$RMSE = \sqrt{MSE}$$

$$i_p = \frac{p_1}{p_0}$$ $$i_q = \frac{q_1}{q_0}$$ $$i_Q = \frac{Q_1}{Q_0}$$ $$i_{\sum q} = \frac{\sum q_1}{\sum q_0}$$

$$i_{pz} = \frac{\bar{p}_1}{\bar{p}_0} = \frac{\frac{\sum p_1 q_1}{\sum q_1}}{\frac{\sum p_0 q_0}{\sum q_0}}$$

$$i_{sz(0)} = \frac{\frac{\sum p_1 q_0}{\sum q_0}}{\frac{\sum p_0 q_0}{\sum q_0}}$$

$$i_{sz(1)} = \frac{\frac{\sum p_1 q_1}{\sum q_1}}{\frac{\sum p_0 q_1}{\sum q_1}}$$

$$i_{š(0)} = \frac{\frac{\sum p_0 q_1}{\sum q_1}}{\frac{\sum p_0 q_0}{\sum q_0}}$$

$$i_{š(1)} = \frac{\frac{\sum p_1 q_1}{\sum q_1}}{\frac{\sum p_1 q_0}{\sum q_0}}$$

$$I_H = \frac{\sum p_1 q_1}{\sum p_0 q_0}$$ $$I_{C(0)} = \frac{\sum p_1 q_0}{\sum p_0 q_0}$$ $$I_{C(1)} = \frac{\sum p_1 q_1}{\sum p_0 q_1}$$ $$I_{FO(0)} = \frac{\sum p_0 q_1}{\sum p_0 q_0}$$ $$I_{FO(1)} = \frac{\sum p_1 q_1}{\sum p_1 q_0}$$

$$I_{C(0)} = \frac{\sum \frac{p_1}{p_0} \cdot Q_0}{\sum Q_0}$$

$$I_{FO(0)} = \frac{\sum \frac{q_1}{q_0} \cdot Q_0}{\sum Q_0}$$

$$I_{C(1)} = \frac{\sum Q_1}{\sum \frac{Q_1}{\frac{p_1}{p_0}}}$$

$$I_{FO(1)} = \frac{\sum Q_1}{\sum \frac{Q_1}{\frac{q_1}{q_0}}}$$