$$E(Y)=\int h(y)*f(x)dx \rightarrow \text{pomocna veta}$$
$$var(Y)=E(Y^2)-E(Y)^2$$
$$E(aX+bY)=a*E(X)+b*E(Y)$$
$$cov(X,Y)=E(X*Y)-E(X)*E(Y)$$
$$\delta(U,V)=\frac{cov(U,V)}{\sqrt{var(U)}*\sqrt{var(V)}}$$

$$var(aX)=a^2*var(X)$$
$$var(X+c)=var(X)$$
$$var(X\pm Y)=var(X)+var(Y)\pm 2\mathrm{cov}(X,Y)$$

$$\text{Ak } X,Y \text{ su nezavisle}$$
$$E(X*Y)=E(X)*E(Y)$$
$$cov(aX,bY)=a*b*cov(X,Y)$$

$$CLV$$
$$1, x_i \text{ nezavisle}$$
$$2, x_i \text{ maju rovnake RP}$$
$$S_n=\sum_1^n x_i \sim N(n*m, n*\varsigma^2) \rightarrow \frac{S_n-n*m}{\sqrt{n}*\varsigma}\sim N(0,1)$$
$$\text{kde } E(x_i)=m$$
$$var(x_i)=\varsigma^2$$

$$E(X)=\sum_i^n x*f(x) \rightarrow \text{diskretne rozdeleni}$$
$$E(X)=\int x*f(x)dx \rightarrow \text{spojite}$$

$$Ak\ X \sim N\left(n_{1,}\ \delta_1^2\right)$$
$$Y \sim N\left(n_{2,}\ \delta_2^2\right)$$
$$tak$$
$$X+Y \sim N\left(n_1+n_{2,}\ \delta_1^2+\delta_2^2\right)$$

Statistika

$$\hat{n_1}=\hat{E}\left(X\right)=\frac{1}{n}\sum_1^n x_i$$

$\bar{x}=$ *prostredna hodnota , ak su* 2 *tak arit. priem.*

Odhad variancie

$$m_2=\frac{1}{n}\sum_1^n x_i-n*\bar{x}^2$$
$$S^2=\frac{1}{n-1}\sum_1^n x_i-n*\bar{x}^2$$
$$\hat{\xi}=\sqrt{m_2}$$
$$\hat{\xi}=\sqrt{S^2}$$
$$\hat{mkr}\left(x\right)=\hat{q}_3-\hat{q}_1$$

$$\hat{E}\left(X\right)=\frac{1}{n}\sum_1^n x_i*n_i$$

$$\hat{med}\left(X\right)=\tilde{x}=\frac{\triangle x}{velkost\ intervalu}=\frac{str.\ hodnota}{pocetnost\ intervalu}$$

Nejasnosti → *Matej Minarik*