X .. EX $\operatorname{var} X$

(?) EX^k pro všechna $k \in \mathbb{N}$ k-tý moment

$$EX^k = \int_{-\infty}^{\infty} x^k f(x)\,dx$$

$$e^{tx} = 1 + tx + \frac{(tx)^2}{2} + \frac{(tx)^3}{3!} + \dots + \frac{(tx)^k}{k!}$$

$$\boxed{E\, e^{tX} = \int_{-\infty}^{\infty} e^{tx} f(x)\,dx} \qquad \lim_{n\to\infty}\left(1+\frac{x}{n}\right)^n = e^x$$

pro 4-13:59

0.05

90% pravděpodobnost

0   p 1

p podíl osob se skupinou A

Statistika : $x_1, \dots, x_N$ populace

výběr $X_1, \dots, X_{15}$

$$\to \quad \bar X = \frac{1}{n}\sum X_i \qquad E\bar X = EX$$

$$S = \frac{1}{n-1}\sum (X_i - \bar X)^2 \qquad \operatorname{var} \bar X = \frac{1}{n}\operatorname{var} X$$

pro 4-14:27

$$\chi^2_1 \;..\; \frac{1}{\sqrt{2\pi}} x^{-1/2} e^{-x/2}$$

$$\Gamma(a,b) \;..\; \frac{b^a}{\Gamma(a)} x^{a-1} e^{-bx}$$

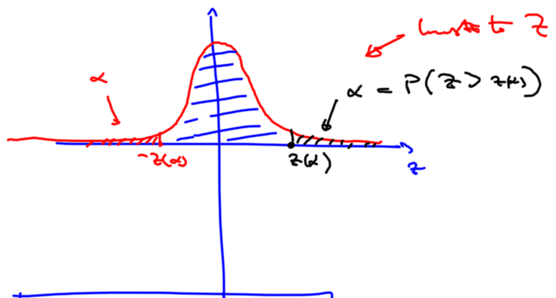
$$M_{\Gamma(a,b)} = \frac{b^a}{(b-t)^a}$$

$$X_i \sim N(\mu, \sigma^2)$$

$$\bar X \sim N\left(\mu, \frac{1}{n}\sigma^2\right), \qquad \frac{n-1}{\sigma^2} S^2 \sim \chi^2_{n-1}$$

normování! $\bar X \mapsto \boxed{\sqrt{n}\,\frac{\bar X - \mu}{\sigma}}$

pro 4-14:42



$$\boxed{1-\alpha = P\big(|Z| < z(\alpha/2)\big)}$$

pro 4-15:15