$$E(\bar{X}) = E\left(\frac{1}{n}\sum X_i\right) =$$

$$= \frac{1}{n} E\left(\sum X_i\right) = \frac{1}{n}\sum E(X_i) =$$

$$= \frac{1}{n}\sum \mu = \mu$$

$$\mathbb{X} \sim N_m(a, V)$$

$$b + \mathbb{X}\cdot D \sim (b + Da D^T, D V D^T)$$

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

$$a + bX \sim N(a + b\mu, b^2\sigma^2)$$

$$\left(1/n, \dots, 1/n\right)\begin{pmatrix}\sigma^2 & & & 0\\ & \sigma^2 & & \\ & & \ddots & \\ 0 & & & \sigma^2\end{pmatrix}\begin{pmatrix}1/n\\ \vdots\\ 1/n\end{pmatrix} =$$

$$= \sum_{k=1}^{n} \frac{\sigma^2}{n^2} = \frac{\sigma^2}{n}$$

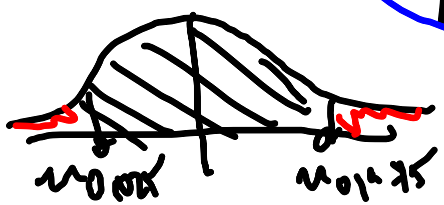
$$P(u_{0,05} < U) = 1-\alpha$$

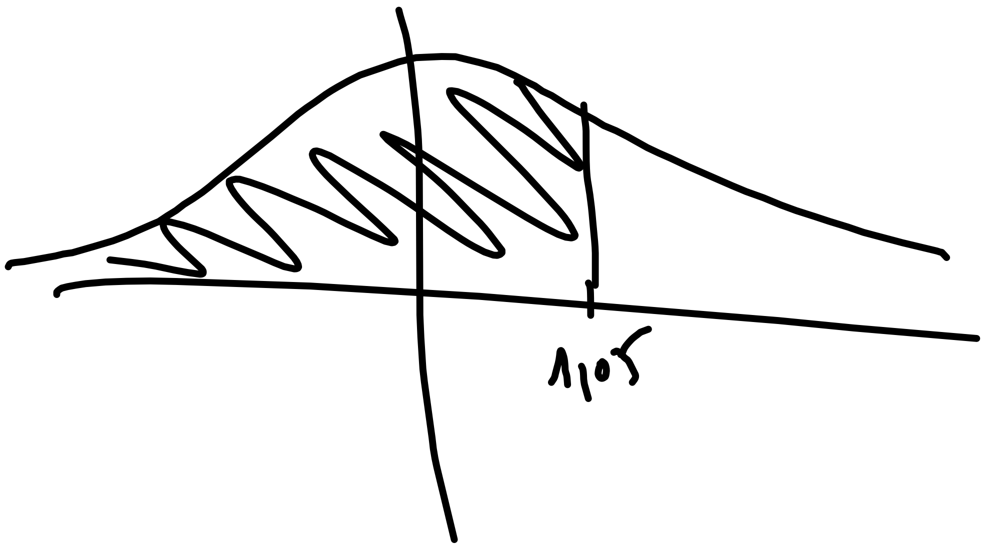
$$M \sim N(\mu, \sigma^2) \rightarrow U = \frac{M-\mu}{\sigma/\sqrt{n}} \sim N(0,1)$$

? zname

$$P\left(u_{\frac{\alpha}{2}} < U < u_{1-\frac{\alpha}{2}}\right) = 1-\alpha$$

$-1{,}96$ $\qquad$ $1{,}96$




1,05

$$M = \frac{1}{n} \sum X_i$$

$$\Theta = \mu$$

$$E(M) = \mu$$

$$E(M) - \Theta = \underline{\underline{0}}$$

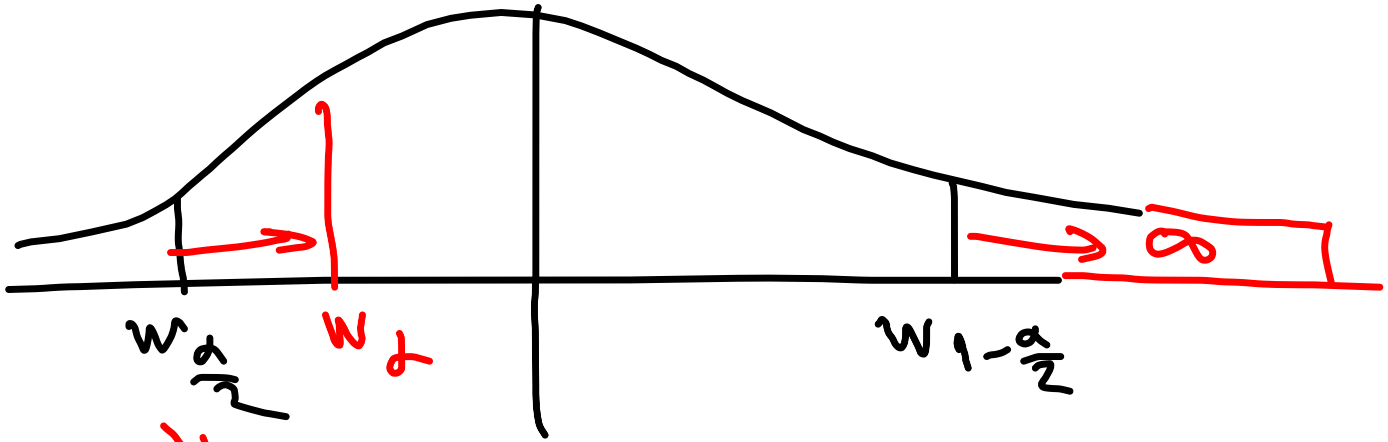
$$P\left(|X - E(X)| < \varepsilon\right) \geq 1 - \frac{D(X)}{\varepsilon^2}$$

$\varepsilon = 0{,}1$ $\quad \alpha < 0{,}05$, $\beta < 0{,}05$ $\Rightarrow \underline{\alpha + \beta < 0{,}1}$

$0{,}09$

$0{,}005$

$$\left.\begin{aligned} |T_n - E(T_n)| &< \frac{\varepsilon}{2} \\ |E(T_n) - \Theta| &< \frac{\varepsilon}{2} \end{aligned}\right\} \Rightarrow |T_n - \Theta| < \varepsilon$$



$\| \; -w_{1-\frac{\alpha}{2}}$, je-li hustota rozdělení sudá fce

$$\underbrace{\mu \pm \frac{s}{\sqrt{n}}\, t_{1-\frac{\alpha}{2}}(n-1)}$$

$$< \mu$$

$$t_{1-\frac{\alpha}{2}}(n-1) < \frac{\mu\sqrt{n}}{\alpha}$$

$$\overset{?}{=}$$

pro $\alpha = 0{,}34$