

11.5

prvorození	druhození
2	6
5	4
4	5
2	7
1	3
4	5

$$\bar{X}_1 = \frac{18}{6} = 3$$

$$\bar{X}_2 = \frac{30}{6} = 5$$

$$\bar{S}_1^2 = \frac{1}{6-1} \left((2-3)^2 + (5-3)^2 + (4-3)^2 + (2-3)^2 + (1-3)^2 + (4-3)^2 \right) = \frac{1}{5} (1+4+1+1+4+1) = \frac{12}{5} = 2,4$$

$$\bar{S}_2^2 = \frac{1}{6-1} \left((6-5)^2 + (4-5)^2 + (5-5)^2 + (7-5)^2 + (3-5)^2 + (5-3)^2 \right) = \frac{1}{5} (1+1+0+4+4+0) = \frac{10}{5} = 2$$

$$\text{est } \sigma^2 = \frac{v_1}{v_1+v_2} \cdot \bar{S}_1^2 + \frac{v_2}{v_1+v_2} \cdot \bar{S}_2^2 = \frac{5}{10} \cdot 2,4 + \frac{5}{10} \cdot 2 = 2,2$$

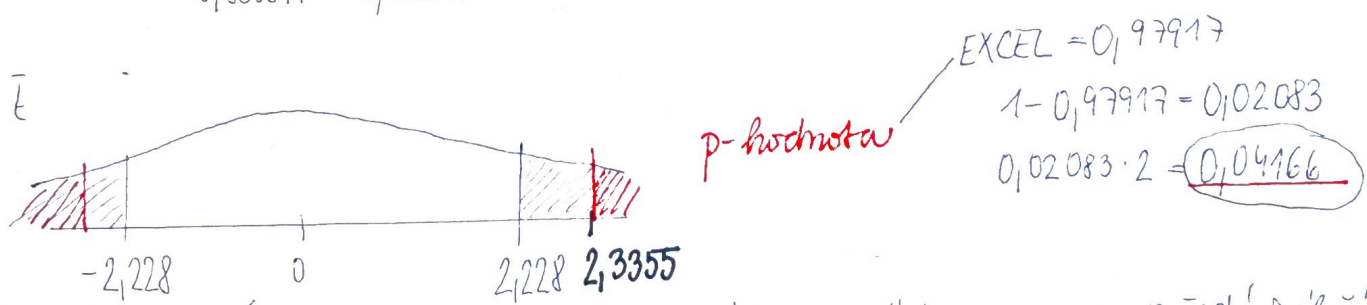
K1) $H_0: \mu_1 = \mu_2 \rightarrow E\bar{X}_1 = E\bar{X}_2 \rightarrow$ mezánísi' má pořadí marození'
 $H_1: \mu_1 \neq \mu_2 \rightarrow E\bar{X}_1 \neq E\bar{X}_2 \rightarrow$ řadísi'

K2) $\text{est } \sigma_{\bar{X}_1 - \bar{X}_2}^2 = \frac{\text{est } \sigma^2}{N_1} + \frac{\text{est } \sigma^2}{N_2} = \frac{2,2}{6} + \frac{2,2}{6} = 0,7333$

$$\text{est } \sigma_{\bar{X}_1 - \bar{X}_2} = \sqrt{0,7333} = 0,856349$$

K3) $\frac{\bar{X}_1 - \bar{X}_2 - 0}{\text{est } \sigma_{\bar{X}_1 - \bar{X}_2}} \stackrel{\text{Koplah'}}{\sim} t(N_1 - 1 + N_2 - 1) \rightarrow (-2,228; 2,228)$
 #0 $v=10$

K4) $\alpha = 0,05 \quad \frac{5-3}{0,856349} = \frac{2}{0,856349} = 2,3355$



K5) $2,3355 = \frac{2}{0,856349} \notin (-2,228; 2,228) \rightarrow H_0 \text{ zamítáme} \rightarrow$ má pořadí řadísi'

$$\frac{\bar{X}_1 - \mu_1}{\text{est } \sigma_{\bar{X}_1}} \in (-t_k(v_1+v_2); t_k(v_1+v_2))$$

$$\mu_1 \in \bar{X}_1 \pm \text{est } \sigma_{\bar{X}_1} \cdot t_k(v_1+v_2)$$

$$\mu_1 \in (2,39447; 3,60553)$$

$$\frac{\bar{X}_2 - \mu_2}{\text{est } \sigma_{\bar{X}_2}} \in (-t_k(v_1+v_2); t_k(v_1+v_2))$$

$$\mu_2 \in \bar{X}_2 \pm \text{est } \sigma_{\bar{X}_2} \cdot t_k(v_1+v_2)$$

$$\mu_2 \in (4,31447; 5,60553)$$