6-10.

$n_1 = 250$, $\bar{x} = 14,5$, $S_1 = 3,5$

$n_2 = 180$, $\bar{y} = 20,8$, $S_2 = 3,8$

(1) $\bar{x} - \bar{y} = 14,5 - 20,8 = -6,3$

(2) $\left( (\bar{x}-\bar{y}) - z_{\frac{\alpha}{2}} \sqrt{\frac{S_1^2}{n_1} + \frac{S_2^2}{n_2}},\ (\bar{x}-\bar{y}) + z_{\frac{\alpha}{2}} \sqrt{\frac{S_1^2}{n_1} + \frac{S_2^2}{n_2}} \right)$

$= \left( (-6,3) - \overset{2,327}{z_{0,01}} \sqrt{\frac{(3,5)^2}{250} + \frac{(3,8)^2}{180}},\ (-6,3) + \overset{2,327}{z_{0,01}} \sqrt{\frac{(3,5)^2}{250} + \frac{(3,8)^2}{180}} \right)$

$= \left( (-6,3) - 2,327 \times 0,36,\ (-6,3) + 2,327 \times 0,36 \right)$

$= (-7,14, -5,46)$

6-11

$n_1 = 12$, $\bar{x} = 36$, $S_1 = 5$

$n_2 = 15$, $\bar{y} = 32$, $S_2 = 7$

$$S_p^2 = \frac{(n_1-1)S_1^2 + (n_2-1)S_2^2}{n_1+n_2-2}$$

$$(\bar{x}-\bar{y}) \pm t_{\frac{\alpha}{2}}(n_1+n_2-2) \sqrt{S_p^2 \left(\frac{1}{n_1} + \frac{1}{n_2}\right)}$$

$= (36-32) \pm t_{0,05}(12+15-2) \sqrt{38,44 \left(\frac{1}{12} + \frac{1}{15}\right)}$ (2,40)

$= 4 \pm 1,708 \times 2,40$

$= (-0,10, 8,10)$