Vi har at

$$T = \frac{\bar{X} - \bar{Y} - (\mu_x - \mu_y)}{S_p \sqrt{\frac{1}{n} + \frac{1}{m}}} \sim t_{n+m-2} = t_{20}$$

~~For vårt datasett blir verdien av testobservatoren~~

~~[illegible]~~

så

$$P\left(\underset{-2{,}086}{\underset{\shortparallel}{t_{20,\,0.025}}} \le T \le \underset{2{,}086}{\underset{\shortparallel}{t_{20,\,0.975}}}\right) = 0{,}95$$

$$P\left(\bar{X} - \bar{Y} - t_{20,0.025} \cdot S_p \sqrt{\frac{1}{n} + \frac{1}{m}} \le \mu_x - \mu_y \le \bar{X} - \bar{Y} + t_{20,\,0.025} \cdot S_p \sqrt{\frac{1}{n} + \frac{1}{m}}\right) = 0{,}95$$

så et 95% k.i. for $\mu_x - \mu_y$ blir:

$$\left(\bar{X} - \bar{Y} - 2{,}086 \cdot S_p \sqrt{\frac{1}{n} + \frac{1}{m}},\ \bar{X} - \bar{Y} + 2{,}086\, S_p \sqrt{\frac{1}{n} + \frac{1}{m}}\right).$$

For våre data blir konfidensintervallet.

$$\left(47{,}5 - 46{,}7 - 2{,}086 \cdot 5{,}9222 \cdot \sqrt{\frac{1}{12} + \frac{1}{10}},\ 47{,}5 - 46{,}7 + 2{,}086 \cdot 5{,}9222 \cdot \sqrt{\frac{1}{12} + \frac{1}{10}}\right)$$

$$= \left(0{,}8 - 2{,}086 \cdot 5{,}9222 \cdot 0{,}4282,\ 0{,}8 + 2{,}086 \cdot 5{,}9222 \cdot 0{,}4282\right)$$

$$= \underline{\underline{(-4{,}49,\ 6{,}09)}}$$

Det er ikke grunnlag for å forkaste $H_0: \mu_x = \mu_y$ mot $H_A: \mu_x \neq \mu_y$ på signifikansnivå $\alpha = 0{,}05$, siden 0 er inneholdt i 95% k.i.