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Content:

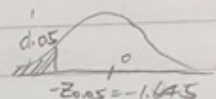
7.6

和圖相同(資料有誤), 因小於0, 左尾

$$H_0: \mu_1 - \mu_2 = 0, H_1: \mu_1 - \mu_2 < 0$$

$$\alpha = 0.05$$

$$t = \frac{\bar{x} - \bar{y}}{s} \therefore Z = \frac{(\bar{x} - \bar{y}) - (\mu_1 - \mu_2)}{\sqrt{\frac{S_1^2}{n_1} + \frac{S_2^2}{n_2}}} \quad (\text{大樣本, } \sigma \text{ 未知})$$



$$\text{棄卻域: } C = \{Z < -Z_{\alpha}\} = \{Z < -1.645\}$$

$$Z = \frac{\bar{x} - \bar{y}}{\sqrt{\frac{S_1^2}{n_1} + \frac{S_2^2}{n_2}}} = \frac{6.98 - 7.20}{\sqrt{\frac{0.28^2}{200} + \frac{0.75^2}{180}}} = -2.801$$

 \therefore 棄卻 H_0 , (B) < (A)

7.7

$$H_0: \mu_1 - \mu_2 = 0, H_1: \mu_1 - \mu_2 \neq 0$$

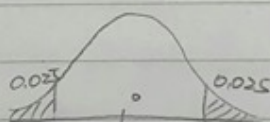
$$\alpha = 0.05$$

獨立母體

$$\text{棄卻域 } C = \{|T| > t_{\alpha/2}(n_1 + n_2 - 2)\} = \{|T| > t_{0.025}(16)\} = \{|T| > 2.120\}$$

$$S_p = \sqrt{\frac{9 \times 0.653^2 + 7 \times 0.67^2}{10 + 8 - 2}} = 0.642$$

$$T = \frac{7.728 - 7.546}{0.642 \sqrt{\frac{1}{10} + \frac{1}{8}}} = 0.598$$



$$-t_{0.025}(16) = -2.120, t_{0.025}(16) = 2.120$$

 \therefore 不棄卻 H_0

7.8

$$H_0: \mu_1 - \mu_2 = 0, H_1: \mu_1 - \mu_2 \neq 0$$

$$\alpha = 0.05$$

$$V = \frac{\left(\frac{S_1^2}{n_1} + \frac{S_2^2}{n_2}\right)^2}{\frac{\left(\frac{S_1^2}{n_1}\right)^2}{n_1 - 1} + \frac{\left(\frac{S_2^2}{n_2}\right)^2}{n_2 - 1}} = \frac{\left(\frac{4.82^2}{12} + \frac{8.54^2}{15}\right)^2}{\frac{(4.82^2)^2}{12 - 1} + \frac{(8.54^2)^2}{15 - 1}} = 22.773 \approx 23$$

$$\text{棄卻域 } C = \{|T| > t_{\alpha/2}(V)\} = \{|T| > t_{0.025}(23)\} = \{|T| > 2.069\}$$