DATE

習1.0

$H_0: \mu_1 = \mu_2 = \mu_3$, $n = 5+6+6 = 17$

$$SST = \sum_{i=1}^{3}\sum_{j=1}^{n_i} y_{ij}^2 - \frac{T^2}{n}$$

$$= 39.159 - 33.264 = 5.895$$

$$SSTR = \sum_{i=1}^{k}\left(\frac{T_i^2}{n_i}\right) - \frac{T^2}{n}$$

$$= 37.873 - 33.264 = 4.609$$

$$SSE = SST - SSTR = 1.286$$

由表知 $F = 25.05 > F_{0.05}(2,14) = 3.74$

聯合信賴區間

$m = \binom{3}{2} = 3$, $\frac{\alpha}{3m} = \frac{0.05}{2\times 3} = 0.0083$

$t_{\frac{\alpha}{2m}}(14) = t_{0.00083}(14) = 2.718$

$S = \sqrt{MSE} = \sqrt{0.092} = 0.303$

求95%信賴區間

$\mu_2 - \mu_1 = (1.53 - 0.963) \pm 2.718 \times 0.303 \times \sqrt{\frac{1}{6}+\frac{1}{5}} = (0.401, 1.399)$ 不含0

$\mu_3 - \mu_2 = (1.91 - 1.53) \pm 2.718 \times 0.303 \times \sqrt{\frac{1}{6}+\frac{1}{6}} = (-0.095, 0.855)$ 含0

$\mu_3 - \mu_1 = (1.91 - 0.963) \pm 2.718 \times 0.303 \times \sqrt{\frac{1}{6}+\frac{1}{5}} = (0.781, 1.779)$ 不含0

Ans: 2.3無差異，方法1.2&1.3有差異