Week 14

$y = 23.78$

$\bar{y} = \frac{23.78}{17} = 1.40$

q-10

1	2	3
0.88	1.54	1.98
0.64	1.78	1.51
0.82	1.29	1.78
0.76	1.33	2.20
0.05	1.91	1.72
	1.14	2.25
3.15/5	9.19/6	11.44/6
=0.63	=1.53	=1.91

$\begin{cases} H_0 = u_1 = u_2 = u_3 \\ H_1 = u_i \text{ 不全等} \end{cases}$

4.67 1.285	3-1=2 17-3=14	2.305 0.092	$\frac{2.305}{0.09} = 25.05$
5.895	17-1=16	$F = 25.05 > F_{0.05}(2,14) = 3.74$	

→ 拒絕 H_0

$\sum_{i=1}^{k}\sum_{j=1}^{n_i} Y_{ij}^2 = (0.88)^2 + (0.64)^2 + (0.82)^2 + (0.76)^2 + (0.05)^2 + \dots + (1.72)^2 + (2.25)^2$

$= 39.159$ $SST = 39.159 - \frac{(23.78)^2}{17}$

$= 5.895$

$\sum_{i=1}^{k} \left(\frac{T_i^2}{n_i}\right) = \frac{(3.15)^2}{5} + \frac{(9.19)^2}{6} + \frac{(11.44)^2}{6} = 37.87$

$SSTR = 37.87 - 33.264 = 4.61$

$SSE = 5.895 - 4.61 = 1.285$

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q-12

$m\left(\frac{3}{2}\right) = 3$

$F_{0.05}(3-1, 17-3) = 3.74$

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

$t_{\frac{\alpha}{2m}=(14)} = t_{0.0083(14)} = 2.718$

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

$\sqrt{(k-1)F} = \sqrt{(3-1)3.74} = \sqrt{7.48} = 2.73$

$\mu_2 - \mu_1 = (1.53 - 0.63) \pm 2.73 \times 0.303 \times \sqrt{\frac{1}{6} + \frac{1}{5}}$

$= (0.399, 1.401)$ → 不包含 0

$\mu_3 - \mu_2 = (1.91 - 1.53) \pm 0.827 \times \sqrt{\frac{1}{6} + \frac{1}{6}}$

$= (-0.098, 0.858)$ → 包含 0

$\mu_3 - \mu_1 = (1.91 - 0.63) \pm 0.827 \times \sqrt{\frac{1}{6} + \frac{1}{5}}$

$= (0.779, 1.781)$ → 不包含 0.