

9.10.

$$H_0: \mu_1 = \mu_2 = \mu_3$$

$$n = 5 + 6 + 6 = 17$$

$$SST = \sum_{i=1}^3 \sum_{j=1}^{n_i} y_{ij}^2 - \frac{T^2}{n} = 39.159 - 33.264 = 5.895$$

$$SSR = \sum_{i=1}^3 \left( \frac{T_i^2}{n_i} \right) - \frac{T^2}{n} = 37.813 - 33.264 = 4.609$$

$$SSE = SST - SSR = 1.286$$

變異來源	平方和	自由度	均方	F檢定值
減肥藥	SSR = 4.609	3 - 1 = 2	MSTR = 2.305	$\frac{2.305}{0.092} = 25.05$
隨機誤差	SSE = 1.286	17 - 3 = 14	MSE = 0.092	
總和	SST = 5.895	17 - 1 = 16		

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

棄合 $H_0$ 。三種藥有明顯差異

9.12

$$m = \binom{3}{2} = 3, F_{0.05}(3-1, 17-3) = 3.74$$

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

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

$$\mu_2 - \mu_1 = (1.53 - 0.63) \pm 2.73 \times 0.303 \times \sqrt{\frac{1}{6} + \frac{1}{6}} = (0.397, 1.401), \text{不包含 } 0$$

$$\mu_3 - \mu_1 = (1.91 - 0.63) \pm 2.73 \times 0.303 \times \sqrt{\frac{1}{6} + \frac{1}{6}} = (-0.098, 0.858), \text{包含 } 0$$

$$\mu_3 - \mu_2 = (1.91 - 0.63) \pm 2.73 \times 0.303 \times \sqrt{\frac{1}{6} + \frac{1}{6}} = (0.779, 1.781), \text{不包含 } 0$$