

9.10. A166230=34 ~~856A~~ W14 HW.
 $T_1 = 3.15$ $T_2 = 9.19$ $T_3 = 11.44$ $\bar{y}_1 = 0.13$ $\bar{y}_2 = 1.53$ $\bar{y}_3 = 1.41$
 $n_1 = 5$ $n_2 = 6$ $n_3 = 6$ $n = 5+6+6 = 17$

Let $H_0: \mu_1 = \mu_2 = \mu_3$
 $SST = \sum_{i=1}^n \sum_{j=1}^k y_{ij}^2 - \frac{T^2}{n} = 5.895$

$SSTR = \sum_{j=1}^k \left(\frac{T_j^2}{n_j} \right) - \frac{T^2}{n} = 37.873 - 33.264 = 4.609$

$SSE = 5.895 - 4.609 = 1.286$

$MSTR = 2.305$ $MSE = 0.092$

$F = \frac{2.305}{0.092} = 25.05$

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

$25.05 > 3.74$ 显著 ☒
 \therefore 拒绝 H_0 . 三种药有显著差异

9.12

$S = \sqrt{MSE} = \sqrt{0.092} = 0.303$ $\sqrt{(k-1)F} = \sqrt{(3-1)3.74} = 2.73$

$\mu_2 - \mu_1 = (1.53 - 0.13) \pm 2.73 \times 0.303 \times \sqrt{\frac{1}{5} + \frac{1}{5}} = (0.399, 1.401)$ 不包含0.

$\mu_3 - \mu_2 = (1.41 - 1.53) \pm 2.73 \times 0.303 \times \sqrt{\frac{1}{6} + \frac{1}{6}} = (-0.098, 0.858)$ 包含0.

$\mu_3 - \mu_1 = (1.41 - 0.13) \pm 2.73 \times 0.303 \times \sqrt{\frac{1}{5} + \frac{1}{5}} = (0.719, 1.981)$ 不包含0.

\therefore 2 & 3 有显著差异