例 9.7

$T_1 = 120 + 180 = 300$　$T_2 = 140 + 120 + 130 = 390$

$T_3 = 190 + 170 + 210 = 570$　$T_4 = 240 + 300 = 540$

$T = 300 + 390 + 570 + 540 = \sum_{i=1}^{k}\sum_{j=1}^{n_i} y_{ij} = 1800$

$\sum_{i=1}^{4}\sum_{j=1}^{n_i} y_{ij}^2 = 120^2 + 180^2 + 140^2 + \cdots + 240^2 + 300^2 = 354400$

$SST = 354400 - \frac{1800^2}{10} = 30400$

$SSTR = \frac{300^2}{2} + \frac{390^2}{3} + \frac{570^2}{3} + \frac{540^2}{2} - \frac{1800^2}{10} = 25800$

$SSE = SST - SSTR = 30400 - 25800 = 4600$

變異來源	平方和	自由度	均方
處理	$SSTR = 25800$	$4 - 1 = 3$	$MSTR = \frac{25800}{3}$
隨機誤差	$SSE = 4600$	$10 - 4 = 6$	$MSE = \frac{4600}{6}$
總和	$SST = 30400$	$10 - 1 = 9$	

例 9.8

顯著水準為 0.05

$H_0: a_1 = a_2 = a_3 = a_4$

變異來源	平方和	自由度	均方	F值
包裝材料	$SSTR = 25800$	$4 - 1 = 3$	$MSTR = 8600$	$\frac{8600}{767} = 11.2$
隨機誤差	$SSE = 4600$	$9 - 3 = 6$	$MSE = 767$	
總和	$SST = 30400$	$10 - 1 = 9$		

$F = 11.2 > F_{0.05}(3, 6) = 4.76$　有差別