例9.7

$T_1 = 120 + 180 = 300$

$T_2 = 140 + 120 + 130 = 390$

$T_3 = 190 + 170 + 210 = 570$

$T_4 = 240 + 300 = 540$

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

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

$SST = 35440 - \dfrac{(1800)^2}{10} = 30400$

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

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

例9.8

$H_0 : a_1 = a_2 = a_3 = a_4$ 顏色对銷量影響相同

$H_1 = $ 至少有兩种壳颜色对銷量影響效果不同

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

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

四種顏色包裝对銷量有影響