

$\mu_1 = \mu_2 = \dots = \mu_k$
 $\sigma_1^2 = \sigma_2^2 = \dots = \sigma_k^2$
 3. 检验方法
 $\alpha = 0.05$

$\bar{y}_1 = \frac{27}{5} = 5.4 \quad \bar{y}_2 = \frac{57}{4} = 14.25$
 $\bar{y}_3 = \frac{39}{3} = 13 \quad \bar{y}_4 = \frac{48}{2} = 24$

$T = 95.4$
 $SSB = 17.4$
 $SS = 55.8$
 $SST = 55.8$
 $MSB = \frac{SSB}{k-1} = \frac{17.4}{3} = 5.8$
 $MSE = \frac{SSE}{n-k} = \frac{38}{11} = 3.45$
 $F = \frac{MSB}{MSE} = \frac{5.8}{3.45} = 1.68$
 $F_{0.05}(3, 11) = 3.1$

$\bar{y}_1 = 5.4$
 $\bar{y}_2 = 14.25$
 $\bar{y}_3 = 13$
 $\bar{y}_4 = 24$

$T = \frac{100 + 170 + 170 + 310}{12} = 180$
 $\frac{1800}{12} = 150$

$SSB = 8600$
 $SS = 8600$
 $MSB = \frac{8600}{3} = 2866.67$
 $MSE = \frac{8600}{6} = 1433.33$
 $F = \frac{MSB}{MSE} = \frac{2866.67}{1433.33} = 2$
 $F_{0.05}(3, 6) = 5.91$

$12^2 + 18^2 + 14^2 + 17^2 + 13^2 + 19^2 + 11^2 + 21^2$
 $+ 22^2 + 30^2 = 35900$
 $SS = 35900 - \frac{(1800)^2}{12} = 30400$
 $SSR = \frac{(100)^2}{12} + \frac{(170)^2}{12} + \frac{(170)^2}{12} + \frac{(310)^2}{12} = 25800$
 $SSE = 30400 - 25800 = 4600$
 $SST = 25800 + 4600 = 30400$