<u>FORMULAE</u> MLR

- $TSS = \sum_i y_i^2 - \frac{\left(\sum_i y_i\right)^2}{n}$

- $MSR = \frac{SSR}{k}$

- $MSE = \frac{SSE}{n-(k+1)}$

- $F_{drop} = \frac{MS_{drop}}{MSE_f} = \frac{\left[SSE_r - SSE_f\right] / \left[df_{SSE_r} - df_{SSE_f}\right]}{SSE_f / df_{SSE_f}} \sim F_{(k-g, n-(k+1))}$

- $F_{part} = \frac{MS_{part}}{MSE_f} = \frac{\left[SSR_f - SSR_r\right] / \left[df_{SSR_f} - df_{SSR_r}\right]}{SSE_f / df_{SSE_f}} \sim F_{(k-g, n-(k+1))}$

- $t = \frac{\hat{\beta}_j}{\sqrt{\text{var}(\hat{\beta}_j)}} = \frac{\hat{\beta}_j}{s.e.(\hat{\beta}_j)} \sim t_{(n-(k+1))}$

- $100(1-\alpha\%)$ C.I. for β_j $:\left(\hat{\beta}_j \pm t_{\alpha/2; n-(k+1)} \cdot s.e.(\hat{\beta}_j)\right)$

- $r^2 = \frac{SSR}{TSS}$

- $r_{adj}^2 = 1 - \frac{SSE/(n-(k+1))}{TSS/(n-1)}$

- *Mallows* $C_p = \frac{SSE_p}{MSE_f} - (n-2p)$ *and* $p = \#$ *of parameters (including* β_0*)*