

#### HW 4

Use the data from Exercise 5.4 on p. 210. Using *matrix methods*, find the following:

- (1)  $\mathbf{Y}'\mathbf{Y}$
- (2)  $\mathbf{X}'\mathbf{X}$
- (3)  $(\mathbf{X}'\mathbf{X})^{-1}$
- (4) Vector  $\mathbf{b}$  of estimated regression coefficients
- (5) Vector of residuals
- (6) SSR
- (7) SSE
- (8)  $\text{Cov}(\mathbf{b})$
- (9) point estimate of  $E\{Y_h\}$  when  $X_h = -6$
- (10) Hat matrix  $\mathbf{H}$