1. Warwick and Druckman (British Journal of Political Science 2001) regress a party’s share of cabinet posts on that party’s share of seats. They argue that no intercept need be included in the regression as the theoretical model they have supposed assumes a zero intercept.

   a. Derive the formula for slope in the regression of $y$ on $X$ (1) when there is a constant and (2) when there is no constant. Comment on the difference between the formulae.

   b. Call $b_1$ the slope when the intercept is ommitted and $b_2$ the slope in the regression that has an intercept. What is the expected value of each of these slopes, assuming $\alpha! = 0$?

   c. If $\alpha = 0$ are the expected values the same?

   d. What is the $V(b)$ (1) when an intercept is included, and (2) when it is not?

   (Greene, Chapter 4, Problems 2 and 3 are variants on this problem.)

2. Greene, Chapter 4. Problem 11.