Problem C6.5

Use the data in HPRICE1.DTA for this exercise.

(i) Estimate the model

$$log(price) = \beta_0 + \beta_1 log(lotsize) + \beta_2 log(sqrft) + \beta_3 bdrms + u$$

and report the results in the usual OLS format.

(ii) Find the predicted value of $log(price)$, when $lotsize = 20,000$, $sqrft = 2,500$, and $bdrms = 4$. Find the predicted value of $price$ at the same values of the explanatory variables.

(iii) For explaining variation in price, decide whether you prefer the model from part (i) or the model

$$price = \beta_0 + \beta_1 lotsize + \beta_2 sqrt + \beta_3 bdrms + u$$

Problem C6.8

Use the data in HPRICE1.DTA for this exercise.

(i) Estimate the model:

$$price = \beta_0 + \beta_1 lotsize + \beta_2 sqrft + \beta_3 bdrms + u$$

and interpret your results, including the standard error of the regression. Obtain predicted price, when we plug in $lotsize = 10,000$, $sqrtft = 2,300$ and $bdrms = 4$; round this price to the nearest dollar.

(ii) Run a regression that allows you to put a 95% confidence interval around the predicted value in part (i). Note that your prediction will differ somewhat due to rounding error.

(iii) Let $price^0$ be the unknown future selling price of the house with characteristics used in parts (i) and (ii). Find a 95% confidence interval for $price^0$ and comment on the width of this confidence interval.