HW 8

1. In this exercise, we will use the kidney function data from Exercise 9.15 on p. 378.

   a) Obtain the scatterplot matrix. What does it suggest?

   b) Fit the multiple regression model containing all three predictors as first-order terms. Are all predictors significant?

   c) Perform best subset selection in order to choose the best model from the pool of possible predictors that includes X_1, X_2, X_3 plus all quadratic terms and all possible interactions. (That is, you should have 9 predictor variables to choose from.) What are the *two* best models according to BIC? Include a plot BIC as evidence which one is the lowest/highest value. Report the coefficients of the best models obtained.

   d) Repeat part c) but this time using AIC. Are the results identical?

   e) Repeat part c) using adjusted R^2? (You might want to use the `leaps` function from the `leaps` package.)

   f) Repeat parts c) & d), but this time using forward selection, as shown in class with the `stepAIC` function. How does your answer compare to the results in parts c) – e)?