

Probability and Statistics II
GSIA, Carnegie Mellon University
45-734, Spring 2002

Homework #4, due Tuesday, April 23, 2002

Please attach relevant eview output to your assignment!

Please do the following problems from the book:

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Using the auto data as in assignment 3, answer the following:

Throughout, be clear what you are assuming. Also, be sure to interpret your answers.

1. Using a typical regression model in which (the level of) price may depend on weight, and domesticity, calculate the weight elasticity of price at sample means. Provide a 95% confidence interval.
2. Calculate the same elasticity, this time using a model in which elasticity may simply be read off the regression output.
3. Construct a model (based on the model in 2) in which to test whether weight elasticity of price is the same for foreign and domestic cars. Test this null hypothesis at the 10% level.
4. Test at the 5% level the null hypothesis that foreign and domestic cars may be pooled in a price-weight regression.
5. What would happen to coefficient estimates and the elasticity estimates in the model of 1 if we were to measure weight in kg instead of lb? How about the model of 2. Why?