

Homework 1
Due Wednesday, August 28, 2013

1. Marginal and conditional probability: The social mobility data from Section 2.5 of Hoff gives a joint probability distribution on $(Y_1, Y_2) =$ (father's occupation, son's occupation). Using this joint distribution, calculate the following distributions:
 - (a) the marginal probability distribution of a father's occupation;
 - (b) the marginal probability distribution of a son's occupation;
 - (c) the conditional distribution of a son's occupation, given that the father is a farmer;
 - (d) the conditional distribution of a father's occupation, given that the son is a farmer.
2. Consider the data in *square_foot.dat*. The data are the number of square feet for each house for sale in Ames, IA during one week in June 2009. In at most one page, describe this data. Picture, text, and numeric summaries may all be used. Be sure to decide what features of the data are important to capture before you begin writing.

For this problem, please produce your answer as a “professional” document. This means typed, plots with nice axis labels, etc.