Homework 4

Applications

1. 10.4. Note that treating G and I as responses and A and S as explanatory variables comes into play when answering 10.4a and during model selection (i.e., don't drop AS from your final model). Do not fit the 4-way model in (b)– explain why this is unnecessary. You don't need to use both forward selection and backward elimination for model selection in (c)–a single approach will do.

2. (a) From your final model in (1), construct an association graph.
   (b) Write a succinct expression of conditional independence for your model.
   (c) Explain which variables you can collapse to study relationships between remaining variables. Demonstrate the effect of collapsing for one of the variables you selected.

3. 8.4. Note that the table incorrectly lists the largest males as females; the correct SAS data set (alligator.sas7bdat) is available on my web page or in my SAS On Demand course directory. For both 8.4a and 8.4b, fit a main effects model, even if terms are insignificant.

4. 7.13. Skip (b). In addition to the conditional logistic regression analysis on the full main effects model, conduct a Bayesian analysis using a Jeffrey's prior (either Markov Chain Monte Carlo or the normal approximation are appropriate here).