Laboratory #9b.
Problem_Solving with the GLM. Executing the Analysis.

In Lab 9b you will execute the analyses you set up in Lab 9a.

Write up for Lab 9 (parts a and b).

For the three data sets displayed in Lab 9a complete the following steps in the generic recipe for data analysis with the GLM. If you revise your model, show the appropriate sequence of steps, including return to steps 1 and 2.

1. Construct model.
   List response and explanatory variables
   Assign symbols, state units and type of measurement scale for each variable.
   Write out statistical model.
2. Execute model and show the plot of residuals against fitted values.
3. Evaluate assumptions
   residuals homogeneous ? (residual versus fit plot).
   residuals normal ? (histogram of residuals, quantile or normal score plot).
   If not met, empirical distribution (by randomization) may be necessary.
4. ANOVA: Show source, df, SS. Calculate likelihood ratio for full model (all terms).
   If negligible evidence ($LR < 20$) report LR and table. Otherwise, Step 7.
7. ANOVA: Calculate MS, F, and Type I error (p-values). Report full table.
9. Declare decision about any interaction terms in model.
   If $p < \alpha$ then reject H_o
   If $p \geq \alpha$ then cannot reject H_o
   If significant, interpret the result.
   If interactive effects are not significant, declare decision about fixed factors and regression terms, then report slope or means for significant terms.

Honours students with a data set of their own can substitute their data set for one of the three sets in Lab 9 analyses. If you decide to use your own data set, be sure to describe (in a short paragraph) how the data were collected..

Be sure to use computer outputs as exhibits, using only relevant parts of the computer output. Each exhibit should be labelled and accompanied by verbal statement of the result next to the exhibit.