Linear Models – Logistic Regression

Downer Cows

Load the data set “downer” which contains information on dairy cows that become recumbent (they lay down). The variable “Outcome” indicates if the animal survived. Various measurements are taken from blood samples. The goal is to see if survival can be predicted by these measurements as well as the number of days recumbent (Daysrec). Analysis these data and write up a short report summarizing your findings. Be sure to include the following:

1. A pairs plot of the predictor variables with a color coding for Outcome. Discuss.
2. Boxplots of the predictor variables by Outcome. Discuss. Log transform any variables that have strong right skews.
3. Fit a “rich” model and look at the summary.
4. Use the step function with AIC and/or BIC and obtain a good model.
5. Look at Marginal Model Plots for your chosen model. If any variables are not modeled well, try to improve your model.
6. Discuss your model in terms of which variables have the biggest impact on downer cow survivability and in terms of any weaknesses in your model.
7. Don’t drink cows’ milk!