Math 6020-1, Spring 2014; Assignment #6

Due: Friday April 18, 2014

1. Finish reading Chapter 11, as well as your lecture notes.
2. 11.36 [Hint: In R, you can do logistic regression by adding the option "family=binomial(logit)" in glm. There might be other ways too. In any event, learn about this option in glm as part of the assignment.] Your answer needs to be written out in detail.
3. Consider the [artificial] data set, 12, 11, 9, 9, 8, 11, 6, 4.
   (a) Estimate the standard error of the sample mean by using the plugin methods of 5080. [Hint: $\mathrm{Var}(\bar{X}) = \sigma^2/8$.]
   (b) Compute a nonparametric bootstrap estimate for the standard error of the sample mean.
   (c) Comment on the differences and similarities between these 2 computations. Describe what ought to happen to those methods as the sample size increases.
   (d) Compute a bootstrap estimate for the standard error of the sample median.