**140.753 Homework 1**

**Due date**: Feb 8 (Thursday) 11:59pm

1. [Agresti] Exercise 5.1

2. [Agresti] Exercise 5.5

3. [Agresti] Exercise 5.6

4. [Agresti] Exercise 5.20

5. [Agresti] Exercise 5.38

6. Implement the Newton-Raphson algorithm for binary (response = 0 or 1) logistic regression using R. Use your R function to find the MLE and standard error of the regression coefficients for data file Ex0107.txt. Compare your results with those obtained from R glm function.

7. **Environmental voting.** The data file Ex0109.csv includes the number of pro-environment and anti-environment votes cast by each member of the U.S. House of Representatives in 2005, 2006, and 2007. Describe the disparity between Republican and Democratic representatives on the probability of casting a pro-environment vote after accounting for *Year*. Ignore representatives from parties other than *D* and *R*.