

Applied Logistic Regression
Exercises 2

1. Use R to generate binary data from a logistic regression model that has one continuous variable and one group variable, as in 1 of logreg2016C3. Report the plot and the true probabilities.
2. Compute the maximum likelihood estimates by repeating the code of 2 of logreg2016C3. Report the starting values, and the values of the estimates after each Newton iteration.
3. Fit the same model to the same data using the glm-function, as in 3 of logreg2016C3. Report the output from the summary-command.
4. Print the covariance estimates of the parameters obtainable from the Newton iteration and using the vcov-function of R to show they are the same.
5. Print the standard errors of the coefficients obtainable from the Newton iteration and from the glm-output to show they agree with the ones given by the summary-command in problem 3.
6. Fit the model with only the continuous variable x1. Give the output with the summary-command.
7. Fit the model with only the group variable x2. Give the output with the summary-command
8. What explains the difference in the results from the three different models?