Homework 3
Due : October 12

Problem 1 – 30 pts

Download dataset data4D2D.xlsx from my webpage.

1. Regress Admit on GPA and GRE using a traditional regression. Produce probabilities of admission for each observation using the resulting linear probability model.
2. A probit regression of Admit on the variables produced the following coefficients:

$Variable$	Coefficient
$Constant$	-3.003536
GPA	0.454575
GRE	0.0016425

   use this model to forecast probabilities of admission for each observation.
3. Plot the two forecast probabilities against each other, fit a line through the resulting cloud, show the line equation and the R^2.
4. Produce a gain chart that compares the performance of the probit model above to a naive model.

Problem 2– 20 pts

Using the exact same data and probit model as in problem 1:

1. Use the probit output to estimate the likelihood that a student whose GPA is 3.60 and whose GRE is 660 will get admitted.
2. Given the same data and model, what is the likelihood of observing exactly one admission among two students both of whose GPA is 3.60 and GRE is 660? Two admissions? Zero?
3. The same student retakes her GRE and improves her score to a 700. By how much have her chances of admission increased according to the Probit model?