Classification Quiz

CMSC320

Name(s):
UID(s):

1. Suppose an individual has a 25% chance of defaulting on her credit card payment. What are the odds that he will default?

2. Suppose we collect data for a group of students in a programming languages class with variables X1 = hours studied (continuous), X2 = undergrad GPA (continuous), and Y = receive an A (binary, "yes/no"). We fit a logistic regression and $Y \approx \beta_0 + \beta_1 X1 + \beta_2 X2$ and get estimates $\hat{\beta}_0 = -6, \hat{\beta}_1 = 0.05, \hat{\beta}_2 = 1$.

Estimate the probability that a student who studies for 30h and has an undergraduate GPA of 3.5 gets an A in the class.

3. With estimated parameters from previous question, and GPA of 3.5 as before, how many hours would the student need to study to have a 50% chance of getting an A in the class?

4. Consider the following confusion matrix.

	Observed +	Observed -	Total
Predicted +	80	20	100
Predicted -	30	70	100
Total	110	90	

a. How many True Positives are there?

b. How many False Negatives are there?

c. What is the recall?

d. What is the precision?

e. What is the True Positive Rate?

f. What is the False Positive Rate?