## HW 1

## STAT 346, Spring 2010

I'll make each homework assignment worth 10 points, so that when I count your best 10 of 13 assignment scores, your overall homework score will be out of 100 points possible. For this assignment, two of the four parts to be turned in (the three parts of Problem 1 and the one part of Problem 2) will be selected for grading, and each of these two selected parts will be worth 5 points apiece. Problem 3 is not to be turned in, but I encourage you to do it and I'll give the answer for it.

1) Consider the setting of Exercise 23 on p. 24 of the text. Let B be the event that a black card is selected, C be the event that a club is selected, and F be the event that a face card is selected. Give the value for each of the probabilities below, along with a brief explanation (either in equation form, or just a short sentence or two) for your answer.

- (a)  $P(B \cap C \cap F)$
- (b)  $P(B \cup C \cup F)$
- (c)  $P((B \cap F)^C)$

2) Do Exercise 1 on p. 33 of the text, providing a brief explanation (e.g., plug into a formula) for your answer. (Take "random" to be in the sense used in Sec. 1.7 of the text (i.e., uniformly at random over the specified interval). See the Definition 1.2 given on pp. 31-32 of the text.)

3) Do Exercise 14 on p. 23 of the text. (Read about odds on p. 22 of the text (Remark 1.4).)

Turn in solutions for Problems 1 and 2, but not 3.