HW 2
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, three of the six parts to be turned in will be selected for grading. (Two of the graded parts will be worth 3 points apiece, and the other one will be worth 4 points.)

1) Do part (a) of Exercise 35 on p. 25 of the text, providing justification for your answer.
2) Consider events $A$, $B$, and $C$ such that $B \subset A$, $P(A \cup B) = 0.4$, and $P(A \cup C) = 0.6$. Give the value of $P(C - A)$, providing justification for your answer.
3) Do part (a) of Exercise 28 on p. 54 of the text, providing justification for your answer. (Assume that his decision at the end of each block is independent of what his previous decisions have been.)
4) Consider sequentially drawing three cards at random from a standard deck of 52 playing cards. (Assume the three random selections are made without replacement. That is, a subset of three different cards are drawn from the 52.) What is the probability that at least two of them are of the same suit?
5) Do Exercise 5 on p. 73 of the text, providing justification for your answer.
6) Do Exercise 6 on p. 82 of the text, providing justification for your answer.

7) Do Exercise 5 on p. 52 of the text, providing justification for your answer. (What’s being requested isn’t the probability of 23 heads in 23 flips, or the probability of 23 tails in 23 flips. Rather, if a fair coin is flipped 23 times, making the usual assumptions of independence, what’s the probability that either 23 heads or 23 tails will be observed? (So the event of interest consists of two different possibilities.))
8) Do part (b) of Exercise 28 on p. 54 of the text, providing justification for your answer. (Assume that his decision at the end of each block is independent of what his previous decisions have been.)

9) Do Exercise 1 on p. 59 of the text, providing justification for your answer.
10) Do Exercise 4 on p. 59 of the text, providing justification for your answer.

11) For Exercise 35 on p. 75 of the text, determine the probability of a royal flush, providing justification for your answer.

12) Do Exercise 51 on p. 77 of the text, providing justification for your answer.

Turn in solutions for Problems 1 through 6, but not 7 through 12.