Homework 3 **92.386 203 Prob & Stat I** **Due Feb 11**

Show all your work. Late Homework will not be accepted without prior approval.

1. Box I contains 3 red and 5 white balls, Box II contains 4 red and 2 white balls. One ball is selected from Box I and placed in Box II and then a ball is selected from Box II. What is the probability that it is white?

2. Balls are selected one at a time with replacement from a box containing four red and six white balls. Find the probability that the

   (a) first ball is red;

   (b) first two balls are red;

   (c) third ball is red;

   (d) third ball is red if the first two balls were red;

   (e) third ball is red if the first ball was red.

3. Redo Q2 if the balls are selected without replacement.

4. Suppose A and B are independent events with $P(A) = 0.7$, $P(B) = 0.4$. Write each of the following events as sets and find their probability.

   (a) A and B both occur.

   (b) A occurs but not B.

   (c) A or B occurs.

   (d) A or B occurs but not both.

   (e) Neither A nor B occurs.