Assignment 8
Due: November 29, 9:30 am

In the questions below, please show the proper steps but it is enough to give a formula rather than the actual number.

1. (2 points) How many license plates can be made using either three letters followed by three digits or four letters followed by two digits?

2. (4 points) How many positive integers between 1000 and 9999 inclusive

   a. are divisible by 9?

   b. are not divisible by 3?

   c. are divisible by 5 or 7?

   d. are divisible by 5 but not by 7?

3. (2 points) How many ways are there for five men and nine women to stand in a line so that no two men stand next to each other? [Hint: first position the women and then consider possible positions for men]

4. (2 points) How many bit strings contain exactly five 0s and 14 1s if every 0 must be immediately followed by two 1s?

5. (2 points) Use the binomial theorem to find the expansion of $(2x-y/x)^7$.