Probability Review Sheet

1. Two cards are picked without replacement from a deck of 52 cards. Determine the probability that both are kings. $\left[\frac{1}{221}\right]$
2. The word COUNTED has been spelled using Scrabble tiles. Two riles are randomly chosen one at a time and placed in the order in which they were chosen. Determine the probability that the tiles are:
    a. CO $\left[\frac{1}{42}\right]$
    b. Both vowels $\left[\frac{1}{7}\right]$
3. The Athletic Council decides to form a sub-committee of seven council members to look at how funds raised should be spent on sports activities at the school. There are a total of 15 athletic council members, 9 males and 6 females. What is the probability that the sub-committee will consist of exactly 3 females? $\left[\frac{56}{143}\right]$
4. A bag of marbles contains 5 red, 3 green, and 6 blue marbles. If a child grabs three marbles from the bag, determine the probability that:
    a. Exactly 2 are blue $\left[\frac{30}{91}\right]$
    b. At least one is blue $\left[\frac{11}{13}\right]$
    c. The first is red, the second is green, and the third is blue $\left[\frac{15}{364}\right]$
    d. One is red, one is green, and one is blue $\left[\frac{45}{182}\right]$
5. City Council consists of nine men and six women. Three representatives are chosen at random to form an environmental sub-committee.
    a. What is the probability that Mayor Jim and two women are chosen? $\left[\frac{3}{91}\right]$
    b. What is the probability that two women are chosen if Mayor Jim must be on the committee? $\left[\frac{15}{91}\right]$
6. In a card game, you are dealt with 5 cards from a standard deck of 52 cards. When you look at your 5 cards, what is the probability that you have:
    a. Four aces? $\left[\frac{1}{54145}\right]$
    b. Four tens and an ace? $\left[\frac{1}{649740}\right]$
    c. 10, J, Q, K and ace? $\left[\frac{64}{162435}\right]$
    d. At least one Jack? $[0.3412]$
7. In a class of 30 students, calculate the probability that:
    a. They all have difference birthdays, assuming no one is born on February 29. $[0.29]$
    b. At least 2 of them have the same birthday. $[0.71]$