1. Let A be the event that a fair coin is tossed and comes up heads. Let B be the event that a fair six sided die is rolled and shows a number greater than 4. Find $P(A \text{ and } B)$.

   ans: 1/6

2. Two basketball players are shooting baskets. The first makes baskets half the time, while the second is successful only 2/5 of the time. If each player takes one shot, what is the probability that at least one of them gets a basket?

   ans: 7/10

3. From a deck of 52 playing cards two cards are drawn, one after the other, without replacement between draws. What is the probability that the first card is a king or a heart?

   ans: 4/13

4. From a deck of 52 playing cards two cards are drawn, one after the other, with replacement between draws. What is the probability that the first card is a heart and the second is a black face card?

   ans: 3/104

5. A pair of dice is rolled. What is the probability that the total of the sides facing up is an even number less than 10?

   ans: 7/18

6. A bag contains 4 red and 7 blue marbles. Two marbles are drawn, one after the other, without replacement between draws. What is the probability that both marbles are red?

   ans: 6/55

7. 10 horses in a race each have an equal chance of winning. To win your bet, you must correctly predict the order of the first three finishing horses. What is the probability of winning the bet?

   ans: 1/720

8. Toss a single six sided die twice. What is the probability that the first toss is a number less than three and the second a number less than five?

   ans: 2/9

9. A bag contains 4 red and 7 blue marbles. Two marbles are drawn, one after the other, without replacement between draws. What is the probability that one marble is red and the other blue?

   ans: 28/55

10. A black jack hand consists of two cards. What is the probability that a black jack hand contains a 10, a face card (jack, king, queen) or an ace?

   ans: 415/663