1. There are 3 envelopes of which 1 contains a $100 bill and 2 contain $5 bills. You randomly pick an envelope.
   (i) What are the chances that you pick the $100 envelope? 1 in 3
   (ii) What are the odds that you pick the $100 envelope? 1 to 2

2. What is the probability that the U.S. military attacks Iran within the next year? Guess

3. You roll a pair of fair dice once. There are eleven possible sums: 2, 3, ..., 12. What is the probability of getting the sum 8? 5/36

4. A fair die is rolled five times. What is the probability that none of rolls produces a "3"? (5/6)^5

5. One card from a well-shuffled deck of playing cards is dealt.
   (i) What is the probability that the card is red? 26/52
   (ii) What is the probability that the card is a face card? 12/52
   (iii) What is the probability that the card is red and a face card? 6/52
   (iv) What is the probability that the card is red or a face card? 32/52

6. (i) A woman tells you she has (exactly) one sibling. What is the probability that the sibling is female? 1/3
   (ii) A woman tells you she has (exactly) one older sibling. What is the probability that the sibling is female? 1/2

7. The September Club is a social club. To be a member one must have been born in the month of September.
   (i) If the September Club has exactly 30 members, what is the probability that at least two of its members have the same birthday (disregarding the year of birth)? Approximately 1
   (ii) If the September Club has exactly 10 members, what is the probability that at least two of its members have the same birthday (disregarding the year of birth)? .81536

8. A benefactor offers you to pick one of 3 closed envelopes. One of the envelopes contains a $100 bill. The other two contain $5 bills. You randomly pick an envelope, but, before you open it, the all-knowing benefactor opens one of the remaining two and reveals it contains a $5 bill. You are then offered the chance to change your original pick. Should you switch your original envelope for the other unopened envelope? Switch. P(Win|Switch)=2/3 while P(Win|stay)=1/3

9. A basketball player has made 75 out of 100 free throws during the season. She is about to shoot her next free throw. For $7 you can buy a betting ticket that "pays off" $10 if she makes it. Would you buy a ticket? Yes, since expected winnings per ticket are 50 cents. Would you buy more than one? Maybe

10. A deck of playing cards has all the aces and all the number cards removed. The twelve face cards remain. After shuffling, each of three players is dealt a card.
(i) What is the probability that the first player gets a king? \( \frac{4}{12} = \frac{1}{3} \)
(ii) What is the probability that the second player gets a king? \( \frac{1}{3} \)
(iii) If the first player gets a king, what is the probability that the second player gets a king? \( \frac{3}{11} \)