EXERCISE 6- UNIFORM DISTRIBUTION AND BINOMIAL DISTRIBUTION

1. 10 ping pong balls are numbered 1-10 and placed in a bag. One ping pong ball is removed from the bag randomly.
    i. Find the expected value and the variance.
    ii. Find the probability that the number on the drawn ping pong ball is between 7 and 10.

2. Roll a six faced fair die. Suppose X denote the number appear on the top of a die.
    i. Find the probability that an even number appear on the top
    ii. Find the probability that the number appear on the top is less than 3. c. Compute mean and variance of X.

3. A telephone number is selected at random from a directory. Suppose X denote the last digit of selected telephone number. Find the probability that the last digit of the selected number is
    i. 6
    ii. less than 3
    iii. greater than or equal to 8

4. A coin is tossed four times. Calculate the probability of obtaining more heads than tails.

5. An agent sells life insurance policies to five equally aged, healthy people. According to recent data, the probability of a person living in these conditions for 30 years or more is 2/3. Calculate the probability that after 30 years:
    i. All five people are still living.
    ii. At least three people are still living.
    iii. Exactly two people are still living.

6. If from six to seven in the evening one telephone line in every five is engaged in a conversation: what is the probability that when 10 telephone numbers are chosen at random, only two are in use?

7. The probability of a man hitting the target at a shooting range is 1/4. If he shoots 10 times, what is the probability that he hits the target exactly three times? What is the probability that he hits the target at least once?