1. A football team wins each week with probability 0.6 and loses with probability 0.4. If we suppose that the outcomes of their 10 games are independent, what is the probability that they will win exactly 8 games?

   Answer : 0.1209

2. Suppose , you are rolling a fair die repetitively.Let's say rolling a 5 is called success.Find the probability that you would be successful exactly thrice after rolling the die 5 times.

   Answer: 0.03215

3. If a coin is flipped until a tail shows up, what is the probability of the number of flips required to be 11?

   Answer: 1/2048

4. A certain football player has a 45% chance of making a free throw.Assume all free throws are independent.What is the probability that he makes his first throw on the 4th try?

   Answer: 0.07487

5. Suppose an urn contains 6 yellow marbles, 2 red marbles, and 2 pink marbles. If we randomly select 4 balls from the urn, with replacement, what is the probability that all 4 balls are yellow?

   Answer: 0.1296

6. A group of 20 friends planned a stayover. At night, everyone gets hungry and they decide on ordering from FoodPanda. After deciding amongst themselves, 30% chose Chinese food, 25% chose Korean food, and also 25% chose Indian food. The remaining people chose Italian food.

   What is the probability, 6 had chosen Chinese, 5 had chosen Korean, 5 had chosen Indian and 4 had chosen Italian?

   Answer: 0.01087

7.

X	0	1	2	3
P(X)	1/8	3/8	3/8	1/8

a) Find the expected value from the above table.
b) Find the Variance.
c) Find the standard deviation

Answer:

a) 1.5
b) 3/4
c) 0.866

8. Three card players play a series of matches. The probability that player A will win any game is 20%, the probability that player B will win is 30%, and the probability player C will win is 50%. If they play 6 games, what is the probability that player A will win 1 game, player B will win 2 games, and player C will win 3?

Answer: 0.135

9.

X	1	2	3
P(X)	k	2k	3k

a) Find the expected value
b) Find the variance
c) Find the standard deviation

Answer:

a) 7/3
b) 5/9
c) 0.745

10. A men's soccer team plays soccer zero, one, or two days a week. The probability that they play zero days is .2, the probability that they play one day is .5, and the probability that they play two days is .3. Find the long-term average or expected value, μ, of the number of days per week the men's soccer team plays soccer.

Answer: 1

11. Suppose that four players will play 12 consecutive games. Given that, probability of winning player 1, 2, 3, and 4 is 10%, 20%, 40%, 30% respectively. After participating in each game either they will win or lost, there is no toss. What is the probability of winning player 1 in two games, player 2 in four games, player 3 in three games and player 4 is three games. Ans: .008

12. Suppose, a dice is rolled 10 times where each outcome is independent. The probability of expected outcomes 2, 3 and 4 is 30%, 50% and 20% respectively. What is the probability of having outcome 2 is five times, 3 is three times and 4 is two times. Ans: .031

13. If electricity power failures occur according to a Poisson distribution with an average of 3 failures every 20 weeks, calculate the probability that there will not be more than one failure during a particular week. Ans: .989

14. The probability that a person can achieve a target is 3/4. The count of tries is 5. What is the probability that he will attain the target at least thrice? Ans: 459/512

15. A coin that is fair in nature is tossed n number of times. The probability of the occurrence of a head six times is the same as the probability that a head comes 8 times, then find the value of n. Ans: 14