Problems

1. How many 3-letter words with/without meaning can be formed from “LOGARITHM”
   a. Repetition is not allowed b. Repetition is allowed.

2. In how many the letters of the word “LEADER” be arranged.
3. A company has 10 members on its board of directors. In how many ways can they elect a president, a vice-president, a secretary and a treasurer?
4. In how many ways can the word “HOLIDAY” be arranged such that the letter ‘I’ will always come to the left of the letter ‘L’?
5. Find the number of permutations of the letters of the word “CLIMATE”. Such that the vowels occur in odd places.
6. In how many ways can “MATHEMATICS” be arranged. So, that the vowels come together?
7. In how many ways can we pick 3 elements from 5 elements?
8. A five girls say A,B,C,D and E want to take a picture ensuring the picture.
   In how many ways can 5 girls take a picture ensuring the picture comprises of 3 people.
9. In how many ways can a team of 3 boys and 3 girls selected from 5 boys and 4 girls?
10. What is the number of ways to select 4 cards from a pack of 52 playing cards?
    In how many ways
    - Four cars of same suit
    - Four cards belong to four different suits
    - Face cards
    - Two are red and two are black
    - Four are of same colour
11. A committee of 7 has to be formed from 9 boys and 4 girls. In how many ways can this be done when the committee consists of
    a. Exactly 3 girls?
    b. At least 3 girls
    c. Aftmost 3 girls?
12. In a cricket championship, there are 21 matches, if each team plays one match with every other team, what are no. of teams?
13. Find a formula for counting the number of diagonals for a n-gonal.
14. A question paper consists of 10 questions divided into parts A & B. Each part consists of 5 questions. A candidate has to answer 6 questions in all of which at least 2 should be part A and 2 should be from part B. In how many ways can the student select questions?
15. In how many ways can we write 150 as sum of 4 numbers(a+b+c+d = 150).
16. In how many ways can we write 2250 as sum of seven numbers.