1. Out of 7 consonants and 4 vowels, how many words of 3 consonants and 2 vowels can be formed?

2. Out of 5 men and 2 women, a committee of 3 is to be formed. In how many ways can this be done so as to include (i) exactly one women (ii) at least one women.

3. In a group of 13 children, there must be at least two children who were born in the same month.

4. How many three-letter words can be formed using a,b,c,d,e if:

   (1) repetition is not allowed

   (2) repetition is allowed.

5. Use generating function to solve the recurrence relation

$$a_n - 9\, a_{n-1} + 20\, a_{n-2} = 0,\ a_0 = -3 \text{ and } a_1 = -10$$