CM 1606 Computational Mathematics

Tutorial No 12

1) Consider a three-child family of girls and boys.
   i) Identifying all the possibilities of three child family, write the sample space.
   ii) Identify the two events A and B
   A: Family has exactly 2 boys
   B: The first child is a boy
   iii) What is the probability that the family has two boys given that the first child is a boy?
   iv) What is the probability that the first child is boy given that the family has two boys?
   v) What is the probability that the family has two girls given that the third child is a girl?

2) Need to form a committee of 3 members from a group of 8 members. Out of 8 members, 3 are female and 5 are male.

   i) How many total numbers of ways are there to select 3 members to the committee?

   ii) Find the probability of selecting a committee of at least 1 male

   iii) Find the probability of selecting a committee of only male members

   iv) Find the probability of selecting a committee of not more than one female member.

3) How many four digits numbers can be formed with digits 1,2,3,4,6,8 if each digit can use only once in each number? How many of these numbers are greater than 3000?

4) In how many ways can five boys and five girls sit in a raw if:
   i) Two particular girls do not sit together.
   ii) No two girls sit next to each other

5) A school debating team of 5 is to be selected from 7 boys and 5 girls. In how many ways can this be done if
   i) There is no restriction in the selections
   ii) No more than 2 girls are to be included

6) How many four-letter words can be formed from the letters of the word ATTENTIVENESS? How many of these words will have at least one vowel?