

### Counting Techniques.

1. *A box contains 5 blue balls numbered from 1 to 5 and 3 green balls numbered from 1 to 3. How many ways are there to select one blue and one green ball from this box?*
2. *How many outcomes are possible if a die is rolled*
  - (a) *2 times*
  - (b) *3 times*
  - (c) *7 times;*
  - (d) *How many outcomes are possible if a coin is tossed 10 times?*
3. *6 friends spend vacations in a country house. For a particular day they need to choose 3 people to cook breakfast, lunch and dinner respectively. How many choices do they have?*
4. *In how many ways can 5 teachers can be distributed to 5 different schools*
  - (a) *if each school gets one teacher;*
  - (b) *without any restrictions?*
5. *A club has 30 members.*
  - (a) *How many ways are there to elect the president, the vice-president, the treasurer and the trip organizer?*
  - (b) *How many ways are there to select a 3 member lawn improvement committee?*
6. *A college of 100 students needs to elect 3 people to the student council and 2 different people to the athletics committee. How many choices do they have?*
7. *A group of 20 workers needs to be divided into the morning shift (7 people), the day shift (6 people), the evening shift (5 people) and the night shift (2 people). How many ways to do it are there?*
8. *A box contains 5 blue balls numbered from 1 to 5 and 3 green balls numbered from 1 to 3. Two balls are chosen at random. What is the probability that one ball is green and one is blue?*