



## TIP OF THE DAY

# MATHEMATICS

Chapter Name :

**Probability**

Topic Name :

**Total Probability and Bayes Theorem**

### Two Persons Game :

If  $p$  and  $q$  are the probability of success, failure of a game in which A and B play and if A starts the game. Then

$$(i) \text{ Probability of A's win} = \frac{p}{1-q^2} = \frac{1}{1+q}$$

$$(ii) \text{ Probability of B's win} = \frac{qp}{1-q^2} = \frac{q}{1+q}$$

### Three Person Game :

If  $p$  and  $q$  are the Probability of success, failure of a game in which A, B and C play in order if A starts the game then

$$(i) \text{ Probability of A's win} = \frac{q}{1-q^3} = \frac{1}{1+q+q^2}$$

$$(ii) \text{ Probability of B's win} = \frac{qp}{1-q^3} = \frac{q}{1+q+q^2}$$

$$(iii) \text{ Probability of C's win} = \frac{q^2p}{1-q^3} = \frac{q^2}{1+q+q^2}$$

$$(iv) \text{ The ratio of their success} = 1 : q : q^2$$