Answer on Question #57442 – Math – Statistics and Probability

Question

During summer vacations Tanuja wants to visit three cities, Kolkata, Bhubneshvar and Chennai randomly. Find the probability that she will visit

(i)   Bhubaneswar before Chennai
(ii)   Bhubaneswar just before Kolkata.

Solution

Tanuja has $n = 6$ variants to visit three cities:

1) Kolkata, Bhubneshvar, Chennai;
2) Kolkata, Chennai, Bhubneshvar;
3) Chennai, Kolkata, Bhubneshvar;
4) Chennai, Bhubneshvar, Kolkata;
5) Bhubneshvar, Chennai, Kolkata;
6) Bhubneshvar, Kolkata, Chennai.
   We consider two events:
   A = {she will visit Bhubaneswar before Chennai } consists of 1), 5) and 6);
   B = {she will visit Bhubaneswar just before Kolkata } consists of 4) and 6).

Using the following formula:

$$p = \frac{m}{n}$$

where *n* is the total amount of all the variants and *m* is the total amount of the favorable variants for events;

(i) $P(A) = \frac{m_1}{n} = \frac{3}{6} = 0.5.$

(ii) $P(B) = \frac{m_2}{n} = \frac{2}{6} = \frac{1}{3}.$

Answer: (i) 0.5; **(ii)** $\frac{1}{3}$.