Probability Assignment -I

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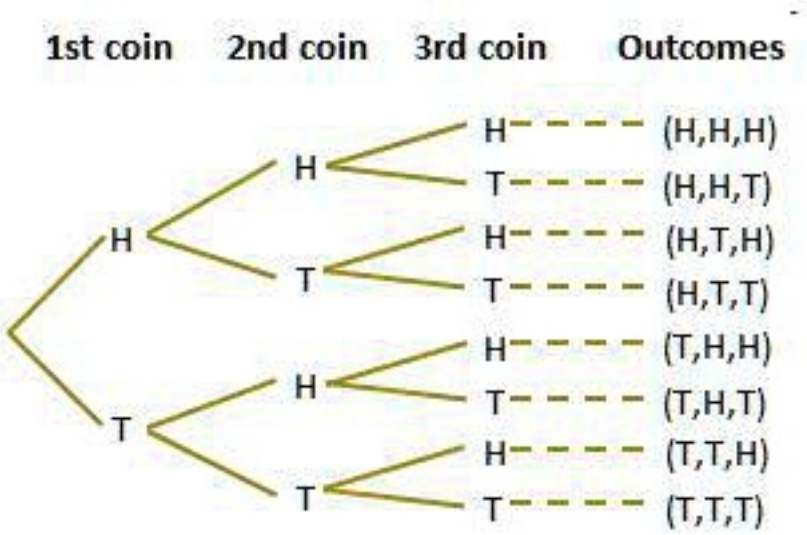
Question:A game consists of tossing a one rupee coin 3 times and noting its outcome each time.Hanif wins if all the tosses give the same result i.e., three heads or three tails, and loses otherwise. Calculate the probability that Hanif will lose the game.

Solution: Let E be the event tossing a coin three times.The S be the sample space of E is



S=$\{HHH, HHT, HTH, HTT, THH, THT, TTH, TTT\}$

Suppose A be the event that all the three tosses of the coin are same.The possible combinations of A are $\{HHH, TTT\}$

Hanif will win when the event A occurs i.e when all the three tosses are same.

Let P be the Probability of Hanif winning

$$P = \frac{Number\ of\ Favourable\ cases}{Total\ number\ of\ cases} \quad (1)$$

$$Number of favourable cases = 2 \quad (2)$$

$$Total number of cases = 8 \quad (3)$$

$$The Probability of Hanif winning = \frac{2}{8} = 0.25 \quad (4)$$