

CHAPTER – 14

PROBABILITY

S.no	Term	Description
1	Empirical probability	It is a probability of event which is calculated based on experiments Empirical Probability $= \frac{\text{No of trials which expected outcome came}}{\text{Total Number of trials}}$ Example: A coin is tossed 1000 times; we get 499 times head and 501 times tail, So empirical or experimental probability of getting head is calculated as $p = \frac{499}{1000} = .499$ Empirical probability depends on experiment and different will get different values based on the experiment
2	Important point about events	If the event A, B, C covers the entire possible outcome in the experiment. Then, $P(A) + P(B) + P(C) = 1$
3	impossible event	The probability of an event (U) which is impossible to occur is 0. Such an event is called an impossible event $P(U) = 0$
4	Sure or certain event	The probability of an event (X) which is sure (or certain) to occur is 1. Such an event is called a sure event or a certain event $P(X) = 1$
5	Probability of any event	Probability of any event can be as $0 \leq P(E) \leq 1$

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1	Theoretical Probability	The theoretical probability or the classical probability of the event is defined as $P(E) = \frac{\text{Number of outcome favourable to } E}{\text{Number of all possible outcome of the experiment}}$
2	Elementary events	An event having only one outcome of the experiment is called an elementary event. "The sum of the probabilities of all the elementary events of an experiment is 1." I.e. If we three elementary event A,B,C in the experiment ,then $P(A)+P(B) +P(C)=1$
3	Complementary events	The event $\bar{A}$, representing 'not A', is called the complement of the event A. We also say that $\bar{A}$ and A are complementary events. Also $P(A) +P(\bar{A})=1$
4	Sure or certain event	The probability of an event (X) which is sure (or certain) to occur is 1. Such an event is called a sure event or a certain event $P(X) = 1$
5	Probability of any event	Probability of any event can be as $0 \leq P(E) \leq 1$