Probability

Trial: action resulting in one or more outcomes
Event: collection of some outcomes of the experiment

Trial	Possible outcomes
Rolling of dice	1, 2, 3, 4, 5, 6
Tossing an unbiased coin :	Head, Tail

Empirical (or experimental) Probability P(E) of an event E

$$\mathrm{P(E)} = \frac{\text{Number of trials in which E has happened}}{\text{Total number of trials}}$$

Properties of Empirical probability

- If events $E_1, E_2, \ldots, E_n$ cover all the outcomes of a trial and P(E) denotes the empirical probability of an event E, then:

$$0 \leq P(E_1), P(E_2), \ldots, P(E_n) \leq 1$$
$$P(E_1) + P(E_2) + \ \ldots + \ P(E_n) = 1$$

- Empirical probability depends upon
  (a) number of trials undertaken
  (b) number of times the expected outcomes show up in the trials