



→ Event nothing thing of your interest.
ex: Bet on 2 is my interest.

$$P(R) = \frac{26}{52} \rightarrow \begin{array}{l} \text{no. of favorable elements in the event} \\ \text{total no. of elements in the sample space} \end{array}$$

$$\hookrightarrow P(\{R\}) = 26 = \diamond + \heartsuit$$

→ Pick two cards at a time

$$= \{ \overset{\text{card 1}}{(A, 2)}, \overset{\text{card 2}}{(A, 3)}, (A, 4), \dots \} \Rightarrow \Omega$$

→ tossing a coin \hookrightarrow possible outcomes

$$= \{+1, -1\} = \Omega$$

→ tossing a 2 coins at a time

$$= \{(HH), (TH), (HT), (TT)\} = \Omega$$

→ throwing two die's

$$\Omega = \{(1,1), (1,2), (1,3), \dots, (6,5), (6,6)\}$$

possible outcomes

- First understand what are the outcomes.

for that I write the sample space.

on that sample space, I am going to define my events, on that events, I am going to calculate probabilities.

eg: Tossing a coin, what is the probability I may get head

$$P(\{H\}) = \frac{\{H\}}{\{H, T\}} = \frac{1}{2}$$

Note: Based on experiment my sample space change.

$$P(R) = \frac{26}{52}$$

$$P(\heartsuit) = \frac{13}{52}$$

$$P(\clubsuit) = \frac{13}{52}$$

$$P(B) = \frac{26}{52}$$

$$P(\diamond) = \frac{13}{52}$$

$$P(\spadesuit) = \frac{13}{52}$$

$$P((\diamond \cap R) \cup \text{pic}) = \frac{22}{52}$$

$$P(\diamond \cup \heartsuit) = \frac{26}{52}$$

$$P(\diamond \text{ or } R) = 26/52$$

$$P(\diamond \cap \heartsuit) = \frac{0}{52}$$

$$P(\diamond \text{ or } B) = 39/52$$

$$P(\diamond \cap \text{pic}) = \frac{3}{52}$$

$$P(\diamond \text{ and } B) = \frac{0}{52}$$

$$P(\diamond \cup \text{num}) = \frac{43}{52}$$

$$P((\diamond \cup B) \cap \text{pic}) = \frac{9}{52}$$

$$P((\diamond \cup B) \cap N) \Rightarrow P(\diamond \cup B) = \frac{34}{52}$$

$$\Rightarrow \frac{30}{52}$$

$$P(N \cup \text{Red}) = \frac{46}{52}$$

$$P((\text{pic} \cup N) \cap \diamond) = P(\text{pic} \cup N) = \frac{52}{52}$$

$$= \frac{13}{52}$$

$$P((\text{pic} \cup B) \cap \text{spark}) = P(\text{pic} \cup B) = \frac{32}{52}$$

$$= \frac{13}{52}$$

$$P(N \cap \text{spark}) = \frac{10}{52}$$

$$P((N \cup \text{Red}) \cap \text{pic}) = P(N \cup \text{Red}) = \frac{46}{52}$$

$$= \frac{6}{52}$$

$$P((N \cup \diamond) \cup B) = P(N \cup \diamond) = \frac{43}{52}$$

$$= \frac{44}{52}$$

$$P(N \cap \text{divisible by } 2) = \frac{20}{52}$$

$$P((\text{pic} \cup \text{odd}) = \frac{32}{52}$$

$$P((\diamond \cup h) \cap \text{pic}) = \frac{6}{52}$$