Probability

1. Introduction ✓
2. Addition Rule (For mutually exclusive event)
3. Addition Rule (For non mutually exclusive event)
4. Multiplication Rule (Independent & Dependent Events)

① **Probability** : It is about determining the likelihood of an event

Eg : Toss a Coin $\{H, T\}$

$$Pr(H) = \frac{1}{2} = 50\%$$

$$Pr(T) = \frac{1}{2} = 50\%$$

Rolling a dice $\{1, 2, 3, 4, 5, 6\}$

$$Pr(x=1) = \frac{1}{6}$$

Mutual Exclusive Event

Two events are Mutual exclusive if they cannot occur at the same time

Eg : Tossing a Coin

$Pr(H) = \frac{1}{2}$ $Pr(T) = 1/2$

$Pr(H \text{ or } T) = Pr(H) + Pr(T)$ {Additive Rule for mutual Exclusive Event}

$= \frac{1}{2} + \frac{1}{2} = 1$

Eg: Rolling a dice $\{1,2,3,4,5,6\}$

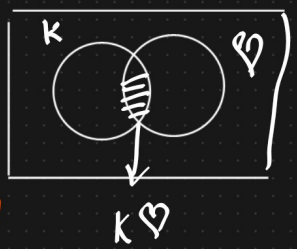
$Pr(1 \text{ or } 5) = Pr(1) + Pr(5)$

$= \frac{1}{6} + \frac{1}{6} = \frac{2}{6} = \frac{1}{3}$ //

*) Non Mutual Exclusive Events

Eg: Taking a card from the deck

$Pr(K \text{ or } \heartsuit) = Pr(K) + Pr(\heartsuit) - P(K \text{ and } \heartsuit)$



$= \frac{4}{52} + \frac{13}{52} - \frac{1}{52}$

↳ Non Mutual Exclusive Event

$= \frac{17}{52} - \frac{1}{52}$

$Pr(K \text{ or } \heartsuit) = \frac{16}{52}$ //