

# Probability Density Function & Probability Mass Function

## Cumulative Distribution Function

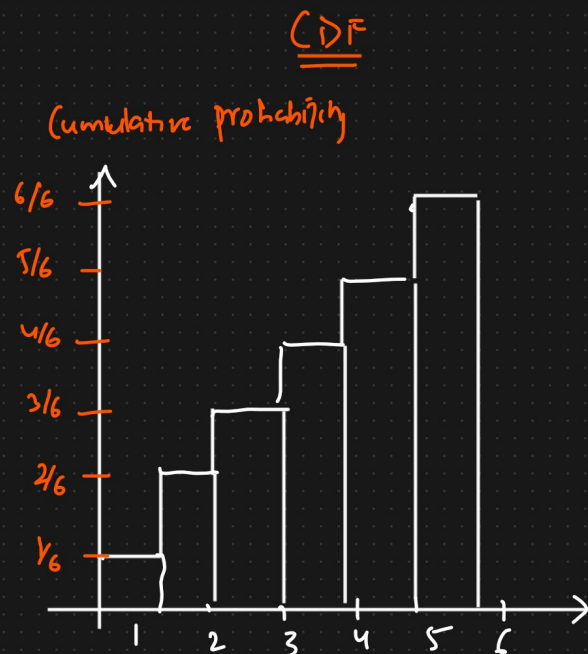
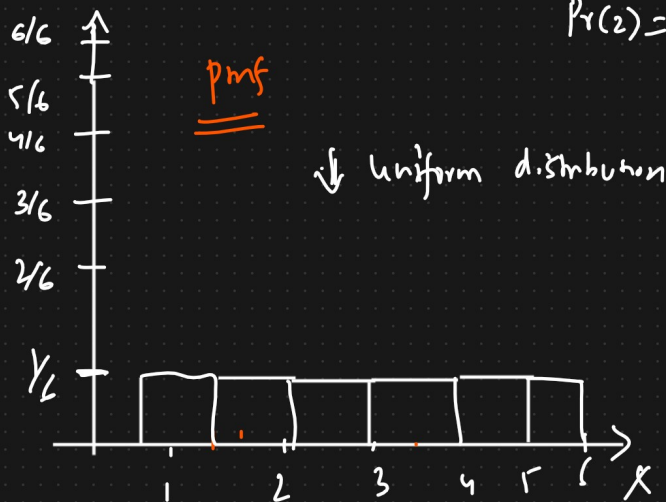
### ① PMF

#### ① Discrete Random Variable

Eg: Rolling a dice

$\{1, 2, 3, 4, 5, 6\} \Rightarrow Pr(1) = \frac{1}{6}$

$Pr(2) = \frac{1}{6}$



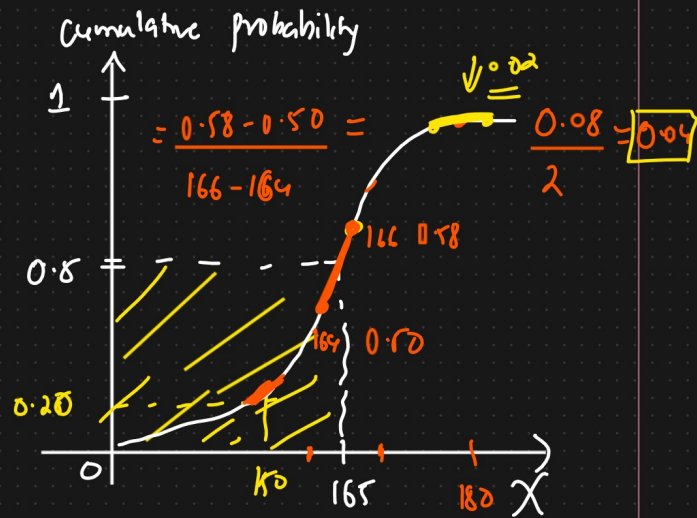
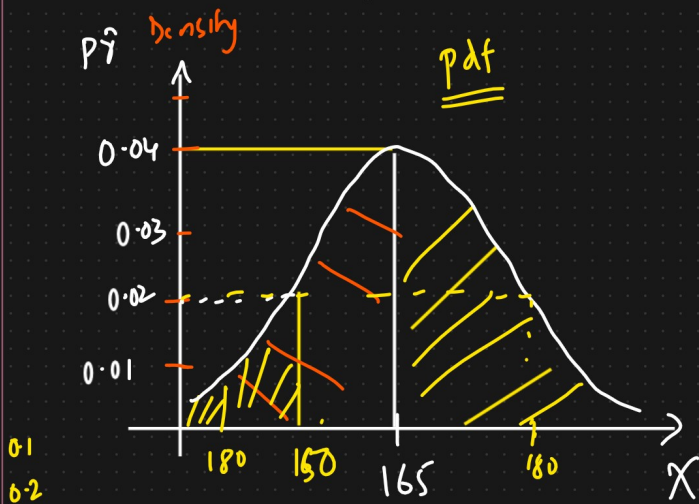
$$Pr(x \leq 2) = Pr(x=1) + Pr(x=2)$$

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

$$Pr(x \leq 6) = \underline{1}$$

## ② Probability Density Function (pdf)

## ① Distribution of Continuous Random Variable



## Probability Density $\rightarrow$ Gradient of Cumulative Curve