

# DISTRIBUTION : PROBABILITY DISTRIBUTION

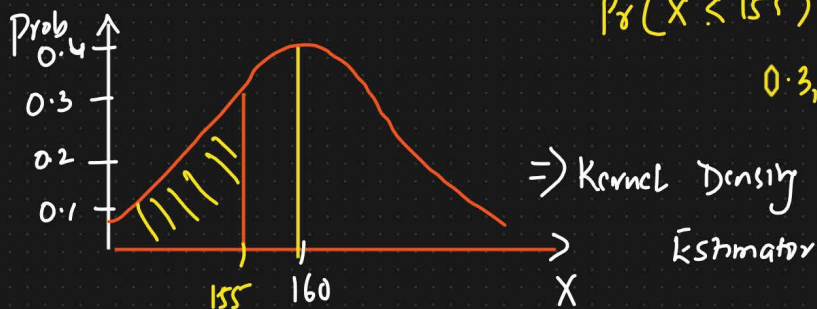
## ① Probability Distribution Function / Density Function

① Probability Density Function (pdf) → Distribution of the continuous data

Eg: Height of students

[0 to 1]

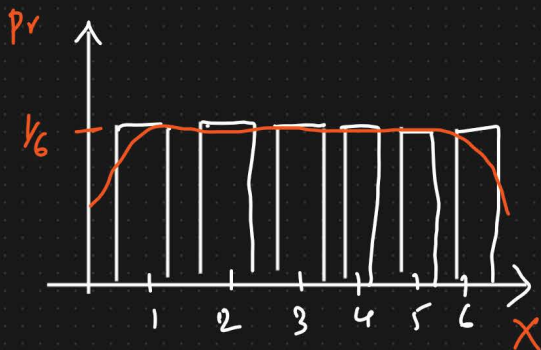
$Pr(X \leq 155) = \text{Area under the curve}$   
0.3, 0.4, 0.5



## ② Probability Mass function (PMF) : Distribution of a Discrete Random Variable

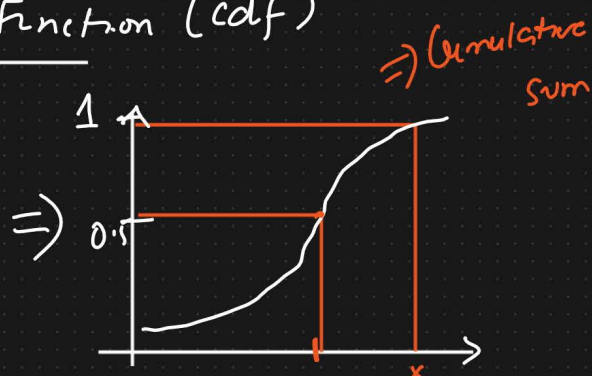
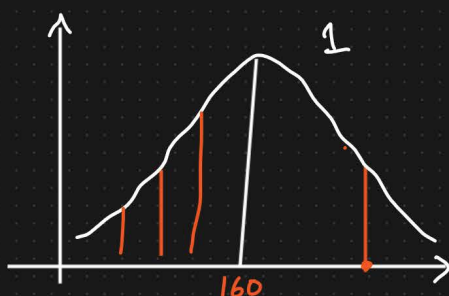
Variable

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

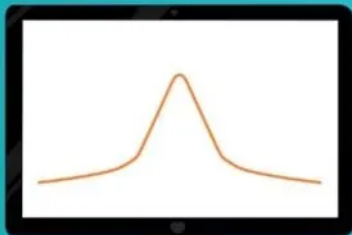


$$\begin{aligned} Pr(X \leq 4) &= Pr(X=1) + Pr(X=2) \\ &\quad + Pr(X=3) + Pr(X=4) \\ &= \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} \\ &= \frac{4}{6} = \frac{2}{3} \end{aligned}$$

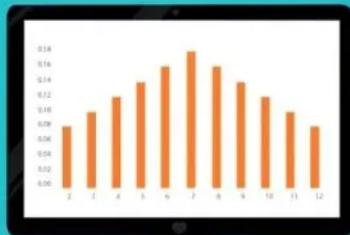
## ③ Cumulative Distribution Function (cdf)



## ***DISTRIBUTION - PROBABILITY DISTRIBUTION***



***NORMAL***



***BINOMIAL***



***UNIFORM***