

Properties of  $P_X(x)$  :-

- ①  $0 \leq P_X(x) \leq 1$   
 $\forall x \in R_X$
- ②  $P_X(x) = 0$   
if  $x \notin R_X$
- ③  $\sum_{x \in R_X} P_X(x) = 1$

Note :-

if  $R_X = \{x_1, x_2, x_3, \dots\}$  then :-

$$F_X(x) = P(X \leq x)$$

$$= \sum_{x_k \leq x} P_X(x_k)$$

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