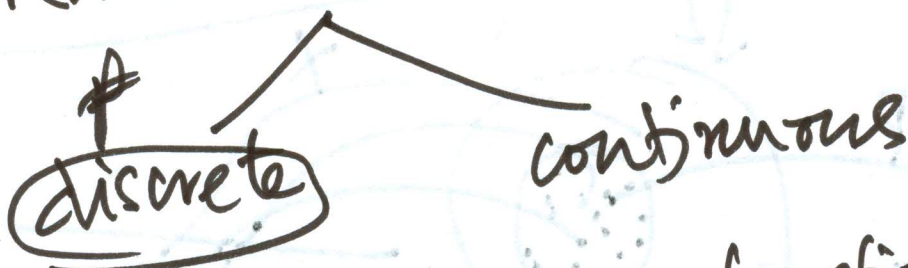


Lecture-7.

Probability & Statistics

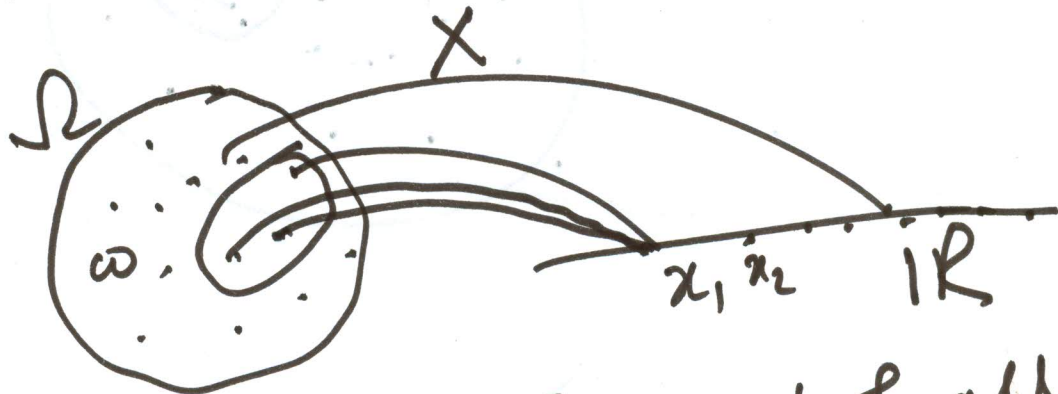
WWW.facweb.iitkgp.ernet.in/~bibhas/Teaching

Random variable, ~~pro~~



Probability Mass function / Probability density function.

"X": $\Omega \rightarrow \mathbb{R}$ (real line)



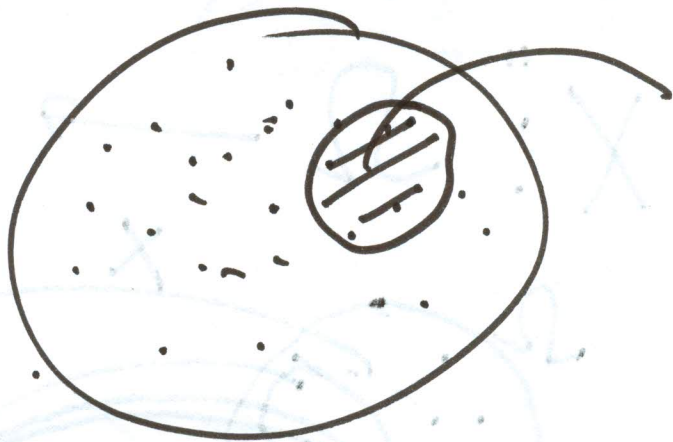
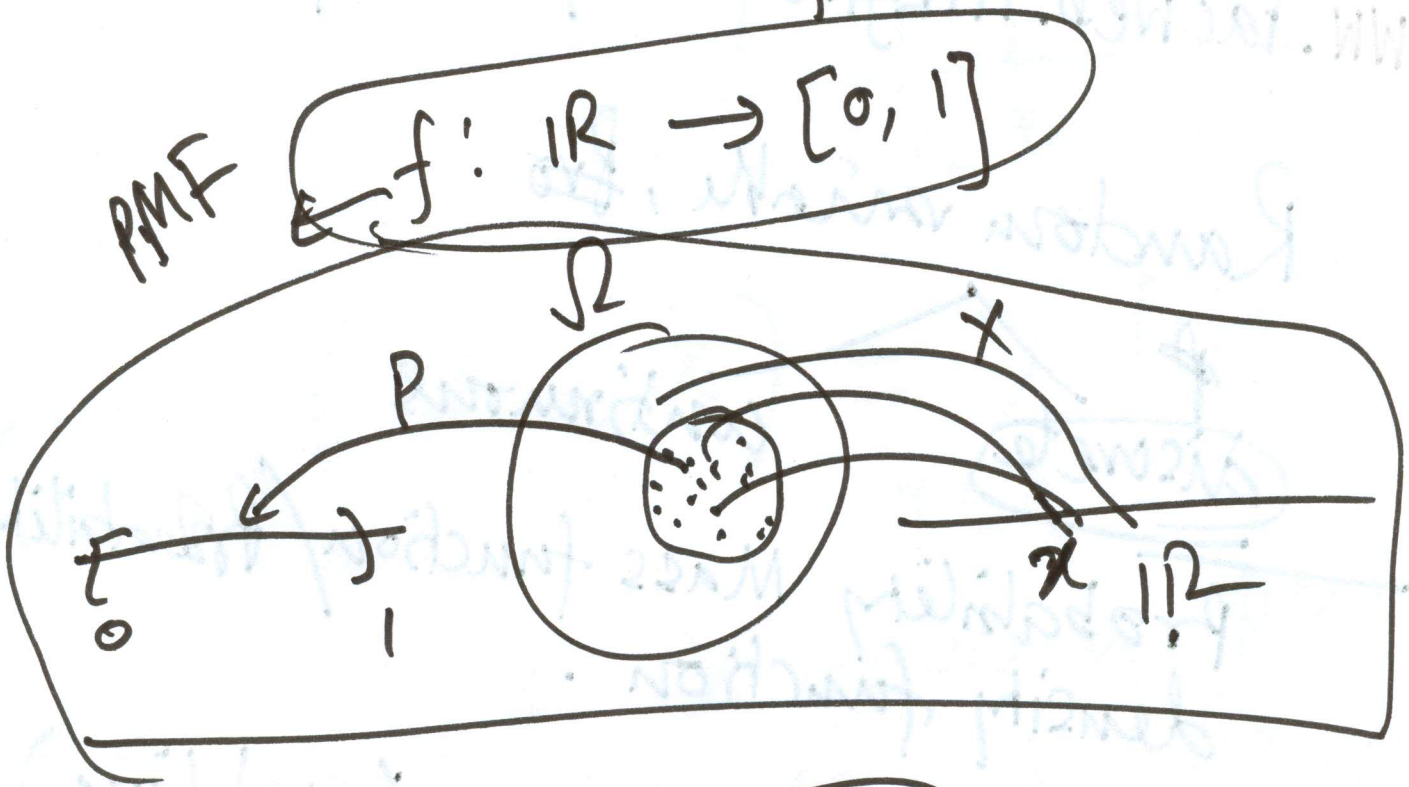
$\sum_x \equiv \sum_{\omega \in \{ \omega \mid X(\omega) = x \}} \in$ set of all events

$$x \in \mathbb{R},$$

$$P(\{X \leq x\}) = P(X \leq x)$$

$$= f(x)$$

PMF $f: \mathbb{R} \rightarrow [0, 1]$



$$f: \mathbb{R} \rightarrow [0, 1]$$

$$1) f(x) \geq 0$$

2) $f(x_i) \neq 0$ at countably infinitely many pts.
 \Rightarrow let those pts be

$$: x_1, x_2, \dots$$

$$3) \sum_i f(x_i) = 1$$

~~$$P(X = x_i)$$~~

$$P(X = x_i)$$

