

③ Uniform Random Variable! - (continuous)

PDF \rightarrow probability Density Function.

$$P(X=x) = \begin{cases} 1/B-a, & a \leq x < B \\ 0, & \text{otherwise.} \end{cases}$$

Uniform Distribution

Ex:

depends on a, B

$U(a, B)$

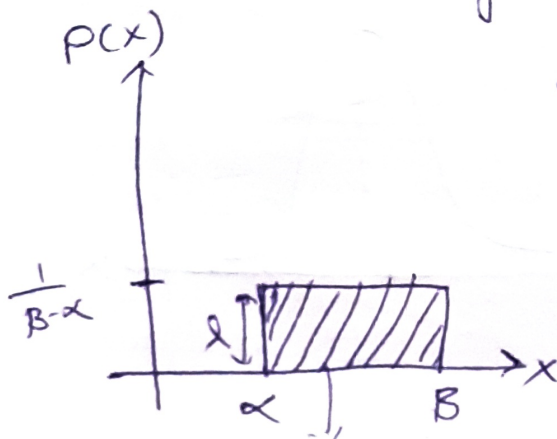
Uniform Distribution

RE \rightarrow

SS \rightarrow

R.V $\rightarrow x \rightarrow x: SS \rightarrow [a, \dots, B]$

Plot of probability Distribution (PDF)



as it is uniform,
 $p(x)$ is same for all
for all sample space
 $x: SS \rightarrow [a, \dots, B]$

~~P(x)~~ Sum of all probabilities
in Sample Space = 1

So, area = 1

$$\therefore \Rightarrow (B-a)l = 1$$

$$\Rightarrow l = \frac{1}{B-a}$$

\therefore probability is $1/B-a$