

table

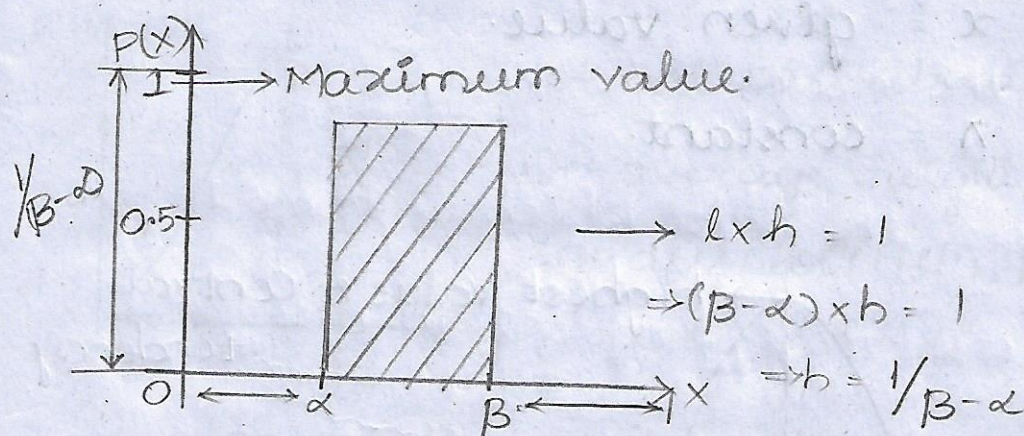
## UNIFORM RANDOM VARIABLE:

A random variable is said to be uniformly distributed over the interval if its

Probability density function is given by.

$$P(X=x) = \begin{cases} 1/\beta-\alpha & \text{if } \alpha \leq x \leq \beta \\ \text{otherwise} \end{cases}$$

it is equal to '0'



## NORMAL RANDOM VARIABLE:

The random variable  $x$  in the normal equation is called the normal random variable.



$$P(X=x) = \frac{1}{\sqrt{2\pi}\sigma} \times \exp\left\{-\frac{(x-\mu)^2}{2\sigma^2}\right\} \quad (92)$$

$$P(X=x) = \frac{1}{\sqrt{2\pi}\sigma} \times e^{\left\{-\frac{(x-\mu)^2}{2\sigma^2}\right\}} \quad [e^x = \exp\{x\}]$$

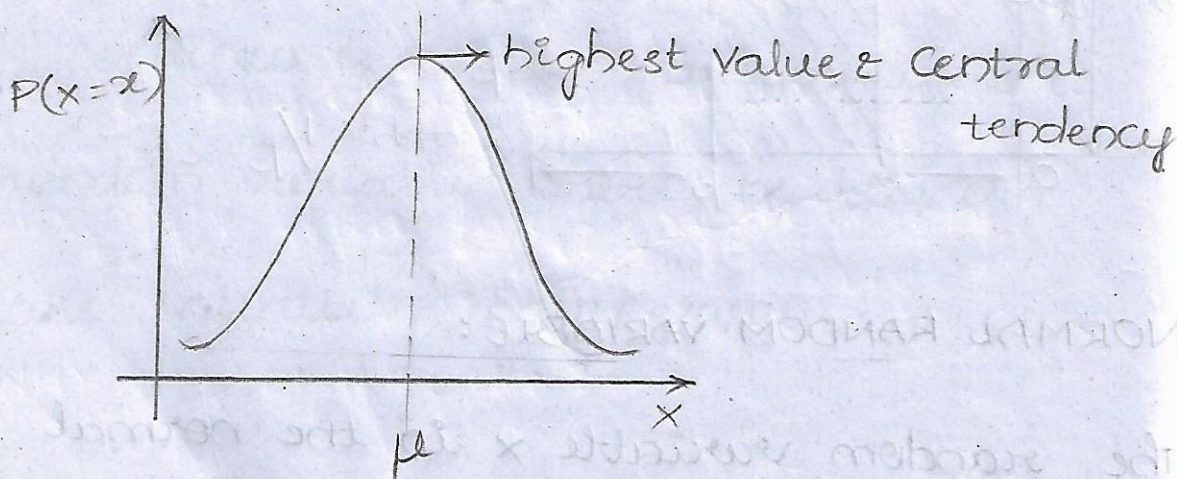
where  $\sigma$  = standard deviation

$\mu$  = mean

$\sigma^2$  = variance

$x$  = given value.

$\pi$  = constant.



\* The above graph is a Bell shaped curve and symmetric.

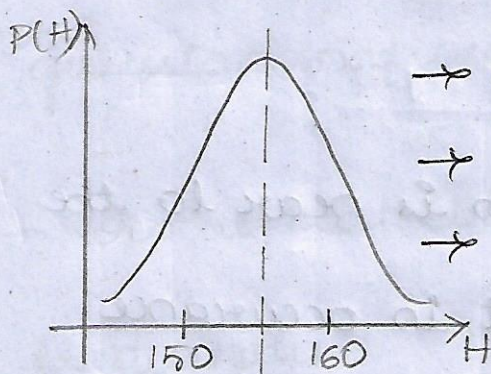
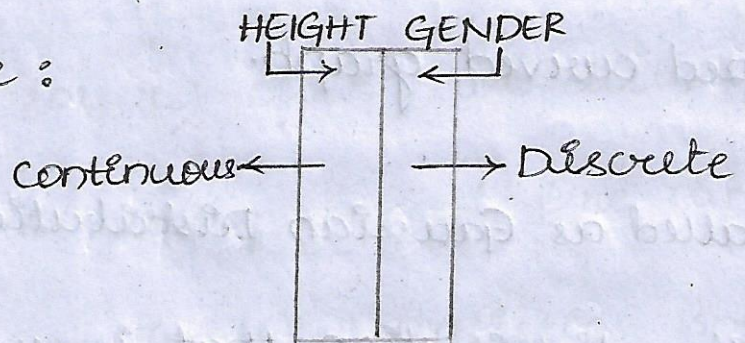


→ The <sup>above</sup> plot of PDF means the random variable is a normal variable.

→ The above plot represents the

"DIST PLOT - KDE (PDF) OR HIST PLOT"

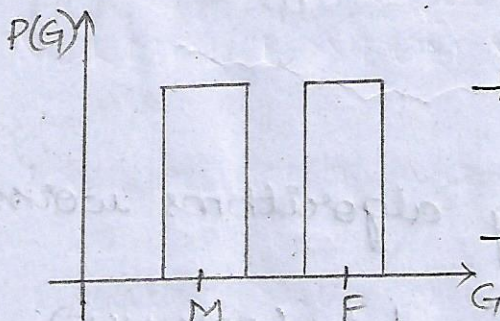
Example :



→ Normal Distribution.

→ On average height is 155cm

→ sns.distplot(df['H'])



→ Uniform Bernoulli distribution

→ Bernoulli distribution