

# AI1103 : Assignment 2

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Download all python codes from

<https://github.com/Manojbhargav1305/AI1103/tree/main/Assignment1/codes>

and latex codes from

<https://github.com/Manojbhargav1305/AI1103/blob/main/Assignment1/Assignment1.tex>

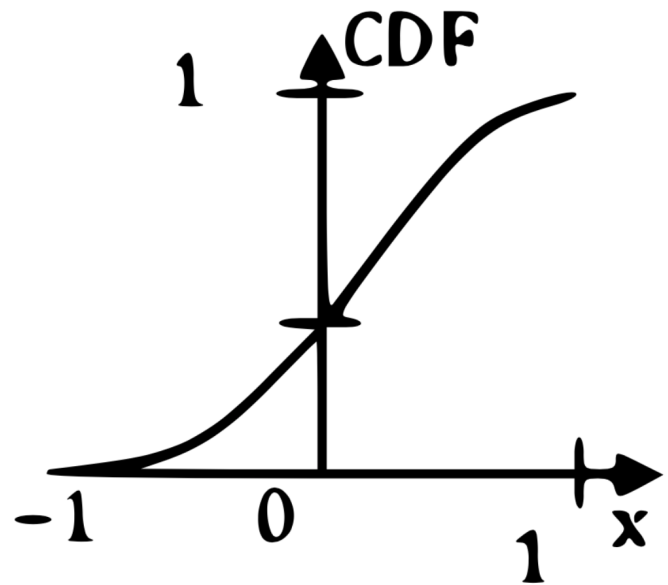
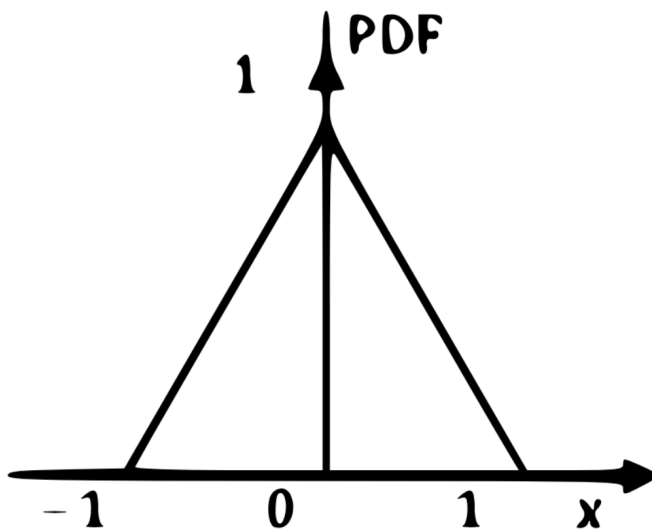
from the equation we get

$$F(x) = \begin{cases} 0 & |x| > 1 \\ \frac{x^2}{2} + x + \frac{1}{2} & -1 \leq x < 0 \\ -\frac{x^2}{2} + x + \frac{1}{2} & 0 \leq x < 1 \end{cases} \quad (0.0.3)$$

Therefore the graph for the corresponding CDF is

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The probability density function(PDF) of a random variable X is as shown in the fig. The corresponding cumulative distribution function (CDF) has the form



SOLUTION

The given PDF graph can be represented by the function  $f(x)$ .

$$f(x) = \begin{cases} 0 & |x| > 1 \\ 1 - |x| & |x| \leq 1 \end{cases} \quad (0.0.1)$$

Now, we need to find the corresponding CDF graph for  $f(x)$ . Let the CDF be represented by  $F(x)$ . We know that

$$F(x) = \int_{-\infty}^x f(x) dx \quad (0.0.2)$$