

5. Plotting and fitting of Uniform distribution and graphical representation of probabilities.

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A uniform distribution is a distribution that has constant probability due to equally likely occurring events. It is also known as rectangular distribution (continuous uniform distribution). It has two parameters a and b : a = minimum and b = maximum. The distribution is written as $U(a, b)$.

A uniform distribution is a type of probability distribution where every possible outcome has an equal probability of occurring. This means that all values within a given range are equally likely to be observed.

Uniform Distribution Formula

The [probability density function](#) (PDF) of a continuous uniform distribution defines the probability of a random variable falling within a particular interval. For a continuous uniform distribution over the interval $[a, b]$.

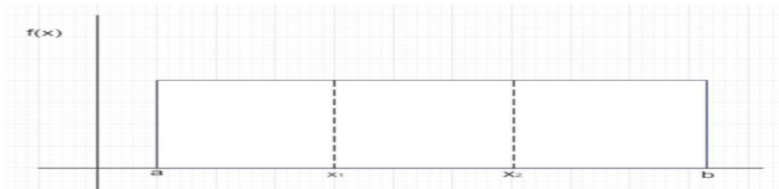
$$f(x) = \frac{1}{b - a} \text{ for } a \leq x \leq b$$

$$\text{Mean } \mu = \frac{a+b}{2}$$

$$\text{Variance } \sigma^2 = \frac{(b-a)^2}{12}$$

how to implement in excel

$$P = (x_2 - x_1) / (b - a)$$



For calculating probability, we need:

1. a : minimum value in the distribution
2. b : maximum value in the distribution
3. x_1 : the minimum value you're interested in
4. x_2 : the maximum value you're interested in

a	15			
b	25			
	case 1	case 2	case3	
x1	16	19	23	
x2	18	22	24	
Uniform Distribution	0.2	0.3	0.1	

