Definitions

This lesson covers the definitions for continuous distribution, discrete distribution, and the probability mass function.

WE'LL COVER THE FOLLOWING

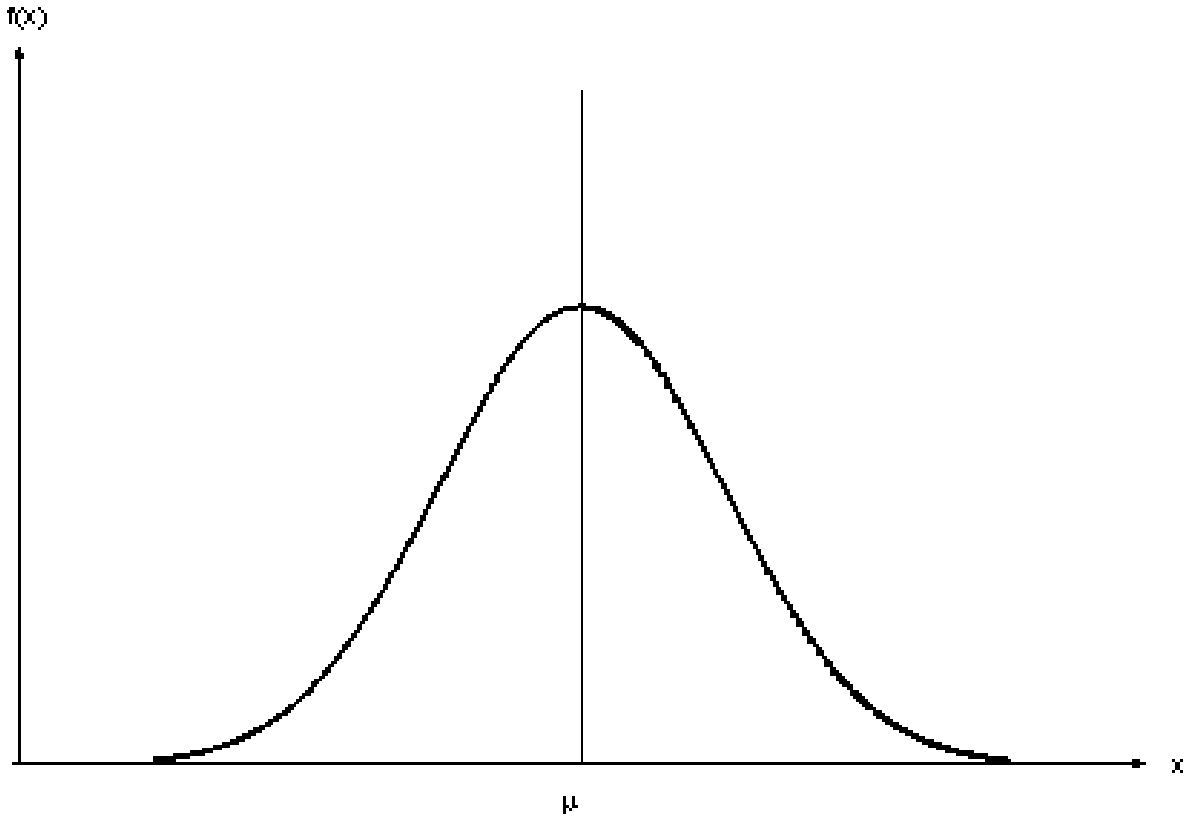
A probability distribution can be continuous or discrete.

Continuous Probability Distribution

A random variable that is a *continuous* variable has a probability distribution called **continuous probability distribution**.

The probabilities of a continuous random variable are defined as the area under the curve of its probability distribution function. Hence, the probability of continuous random variable having a particular value is *zero*. Due, to this continuous probability distribution, cannot be expressed in a tabular form. An equation or formula is used to describe it instead.

This is what a continuous probability distribution looks like:



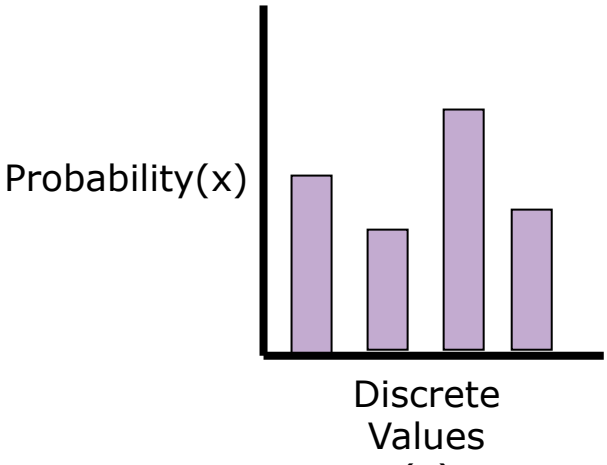
The image above shows normal distribution which is a very common type of continuous distribution.

Discrete Probability Distribution

A **discrete distribution** describes the probability of occurrence of each value of a discrete random variable.

Each value in *discrete probability distribution* can have a non-zero probability. Due to this, it can be represented in a tabular form as well.

This is what a discrete probability distribution looks like:



(x)

Probability Mass Function (PMF)

A **probability mass function** (**PMF**) is a function that gives the probability that a discrete random variable is exactly equal to some value. Said another way, the PMF is a probability measure that gives us probabilities of the possible values for a random variable.