Function

Basic methods of representing function

Analytical Representation

This is essentially representation through a formula.This representation could be a uniform formula in the entre domain, for example, $y = 3x^2$

Or

By several formula which are different for different parts of the domain.

Example: $y = 3x^2$ if $x < 0$

And $y = x^2$ if $x > 0$

In analytical representations, the domain of the function is generally understood as the set of values for which the equation makes sense.

Tabular Representation of Functions

For representing functions through a table, we simply write down a sequence of values of the independent variable x and then write down the corresponding values of the dependent variable y. Thus, we have tables of logarithms, trigonometric values and so forth, which are essentially tabular representations of functions.

Graphical Representation of Function

This is a very important way to represent way to represent functions. The process is: on the coordinate xy plane for every value of x from the domain D of the function, a point P (x, y) is constructed whose abscissa is x and whose ordinate y is got by putting the particular value of x in the formula representing the function.

For example, for plotting the function $y = x^2$, we first decide on the values of x for which we need to plot the graph.

Function

Thus we can take x = 0 and get y = 0 (means the point (0, 0) is on the graph).

Then for x = 1, y = 1; for x = 2, y = 4; for x = 3, y = 9 and

For x = -1 y = 1; for x = -2 ,y = 4 , and so on.

Odd Function

Let a function y = f(x) be given in a certain interval. The function is said to be odd if for any value of x

$$F(x) = -f(-x)$$

Inverse of a Function

Let there be a function y = f(x), which is defined for the domain D and has a range R.

Then, by definition, for every value of the independent variable x in the domain D, there exists a certain value of the dependent variable y. In certain cases the same value of the dependent variable y can be got for different values of x. For example, if $y = x^2$, then for x = 2 and x = - 2 given the value of y as 4.