WELCOME

Lecture# 5

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Domain and Range of function:

Definition of Domain

The domain of a function is the set of real numbers for which the function is defined:

i) The values of x for which y is definite is called the domain of the function.

ii) If a function f is undefined at x it means that x is not in the domain of f.

iii) The most frequent exclusion from division by 0 or negative value under a square root.

Definition of Range

The set of all values that y takes corresponding to the values of x in the domain is called the range of the function

Note: The domain and ranges of many functions are intervals of real numbers.

Now we consider the following functions to determine the domain and range.

Now we discuss to determine the domain of the function.

Firstly we see that, the function is undefined or undetermined for which values of independent variable. If we fined the values of x which is undetermined or undefined, then these values are not in the domain of the function and the other values of independent variable is the set of domain.

Now we discuss to determine the domain and range of the functions (i)-(iv).

All polynomial functions. We know that the polynomial functions are defined for all real values of independent variable.
So domain of the polynomial functions are all real values.

$\therefore$ Set of domain $=$ $\mathbb{R}$ (for all polynomial functions)

For determining the range with the help of example