

Graph of a function:

By a real polynomial function, we mean a function $f: R \rightarrow R$ of the form

$$f(x) = a_n x^n + a_{n-1} x^{n-1} + \dots + a_1 x + a_0$$

where the a_i are real numbers. Since R is an infinite set, it would be impossible to plot each point of the graph. However, the graph of such a function can be approximated by, first plotting some of its points and then drawing a smooth curve through these points. The table points are usually obtained from a table where various values are assigned to x and, the corresponding value of $f(x)$ computed.

Example 1 : let $f: R \rightarrow R$ and $f(x) = x^3$, find $f(x)$

$$f(3) = 3^3 = 27$$

$$f(-2) = (-2)^3 = -8$$

x	$f(x)$
-3	-27
-2	-8
-1	-1
0	0
1	1
2	8
3	27

