

Chapter 02

POLYNOMIALS

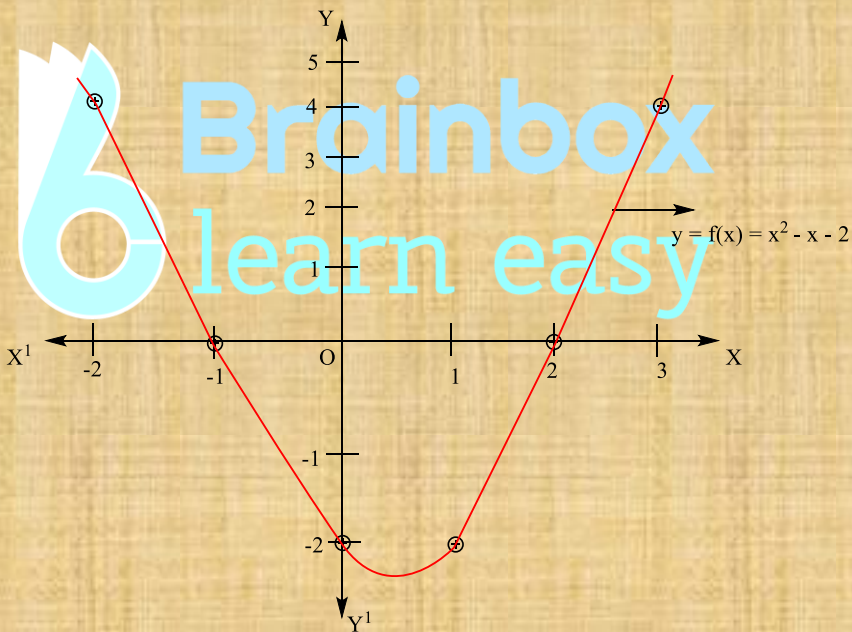
Geometrical Representation of Quadratic Polynomial:

Example:

Graph of the function $f(x) = x^2 - x - 2$.

Solution:

x	-2	-1	0	1	2	3
$y = f(x) = x^2 - x - 2$	4	0	-2	-2	0	4



Observations:

- Now we can see that this graph cuts the x-axis at $x = -1$ and $x = 2$
- If $y = 0$,

$$\Rightarrow x^2 - x - 2 = 0$$

$$\Rightarrow (x-2)(x+1)=0$$

$$\Rightarrow x-2=0 \text{ (or) } x+1=0$$

$\therefore x=-1$ (or) $x=-2$, which are the roots (or) zero of the polynomial $y = f(x) = x^2 - x - 2$.

iii. Actually $x=-1$ and $x=2$ are the values of 'x' where graph of $y = f(x) = x^2 - x - 2$ intersects the x-axis.

NOTE:

For any quadratic polynomial i.e., the zeroes of a quadratic polynomial $ax^2 + bx + c$, $a \neq 0$ are precisely the x -coordinates of the points where the parabola representing $y = ax^2 + bx + c$ intersects the x-axis.

