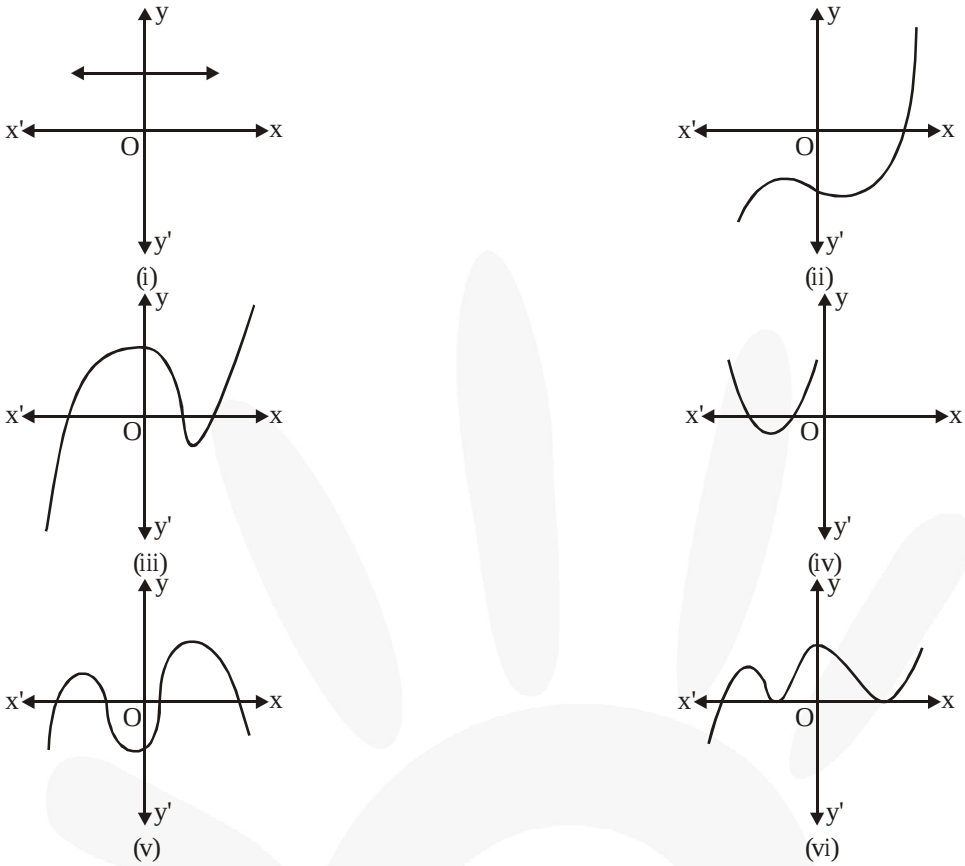
EX-2.1

Q1. The graph of y = p(x) are given in fig below, for some polynomials p(x). Find the number of zeros of p(x), in each case.



Sol. (i) Graph of y = p(x) does not intersect the x-axis. Hence, polynomial p(x) has no zero.

(ii) Graph of y = p(x) intersects the x-axis at one and only one point.
Hence, polynomial p(x) has **one and only one** real zero.

(iii) Graph of y = p(x) intersects the x-axis at 3 points. Hence, polynomial p(x) has 3 zeros.

(iv) Graph of y = p(x) intersects the x-axis at 2 points. Hence, polynomial p(x) has 2 zeros.

(v) Graph of y = p(x) intersects the x-axis at 4 points. Hence, polynomial p(x) has 4 zeros.

(vi) Graph of y = p(x) intersects the x-axis at 1 points and touch x-axis at 2 points. Hence, p(x) has 3 zeros.