Exercise 2.1   Page: 28
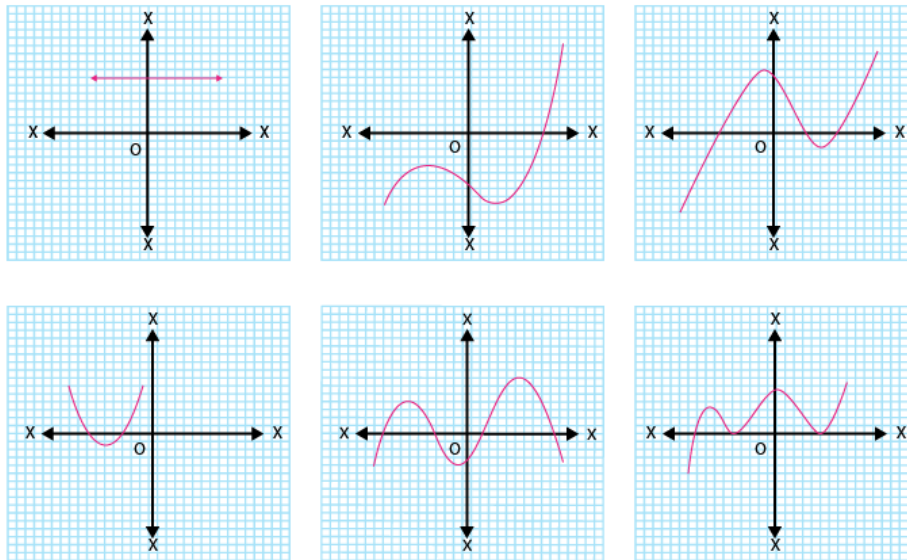
1. The graphs of y = p(x) are given in Fig. 2.10 below, for some polynomials p(x). Find the number of zeroes of p(x), in each case.

Solutions:

Graphical method to find zeroes:-

Total number of zeroes in any polynomial equation = total number of times the curve intersects x-axis.

- (i)   In the given graph, the number of zeroes of p(x) is 0 because the graph is parallel to x-axis does not cut it at any point.
- (ii)   In the given graph, the number of zeroes of p(x) is 1 because the graph intersects the x-axis at only one point.
- (iii) In the given graph, the number of zeroes of p(x) is 3 because the graph intersects the x-axis at any three points.
- (iv)   In the given graph, the number of zeroes of p(x) is 2 because the graph intersects the x-axis at two points.
- (v)   In the given graph, the number of zeroes of p(x) is 4 because the graph intersects the x-axis at four points.
- (vi)   In the given graph, the number of zeroes of p(x) is 3 because the graph intersects the x-axis at three points.