Introduction to Graphs: Exercise 15.2

Q.1 Plot the following points on a graph sheet. Verify if they lie on a line
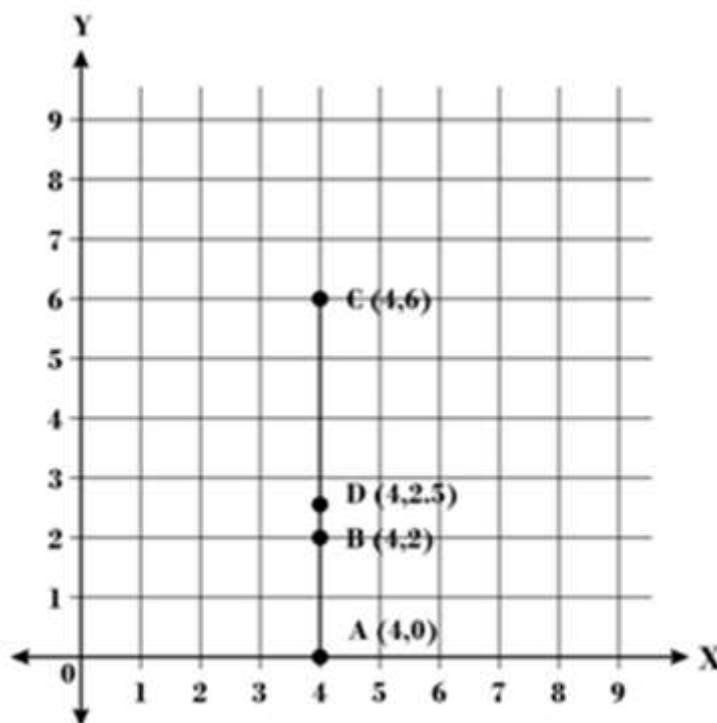**(a) A(4, 0), B(4, 2), C(4, 6), D(4, 2.5)**
(b) P(1, 1), Q(2, 2), R(3, 3), S(4, 4)
(c) K(2, 3), L(5, 3), M(5, 5), N(2, 5)
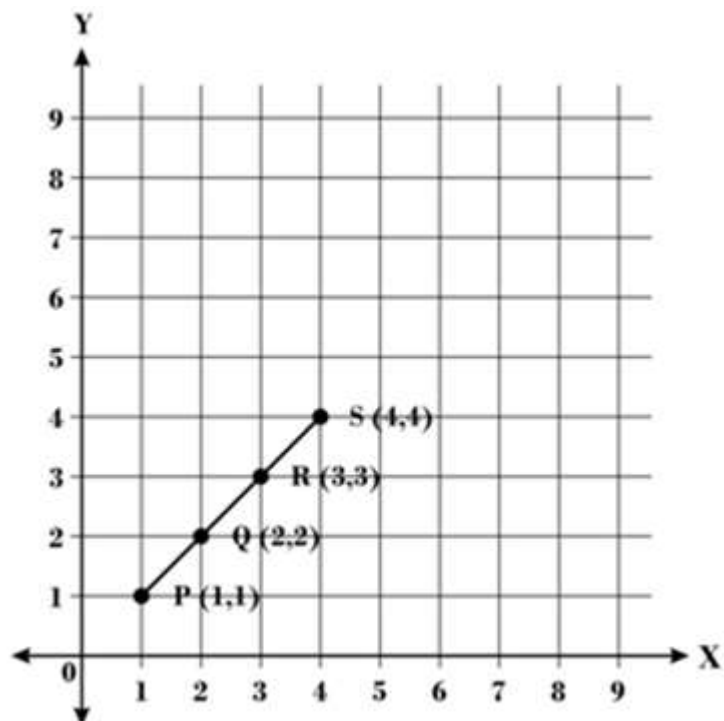*Sol.* **(a) Given:** Points A(4, 0), B(4, 2), C(4, 6), D(4, 2.5)
The given points are plotted on a graph:

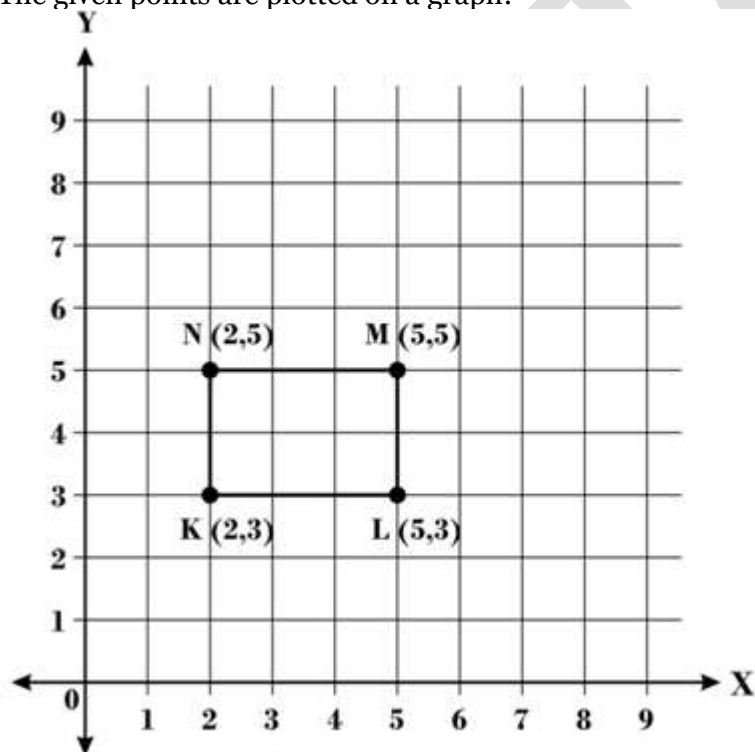We can see in the graph that the points lie on the same line.

(b) Given: Points P(1, 1), Q(2, 2), R(3, 3), S(4, 4)
The given points are plotted on a graph:

We can see in the graph that the points lie on the same line.

(c) Given: Points K(2, 3), L(5, 3), M(5, 5), N(2, 5)
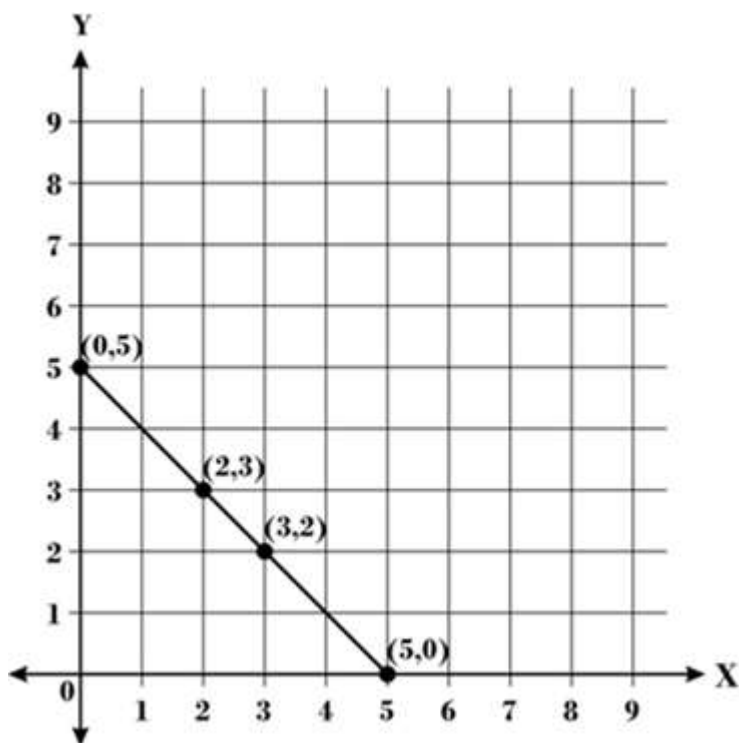The given points are plotted on a graph:

We can see in the graph that the points do not lie on the same line.

Q.2 Draw the line passing through (2, 3) and (3, 2). Find the coordinates of the points at which this line meets the x-axis and y-axis.
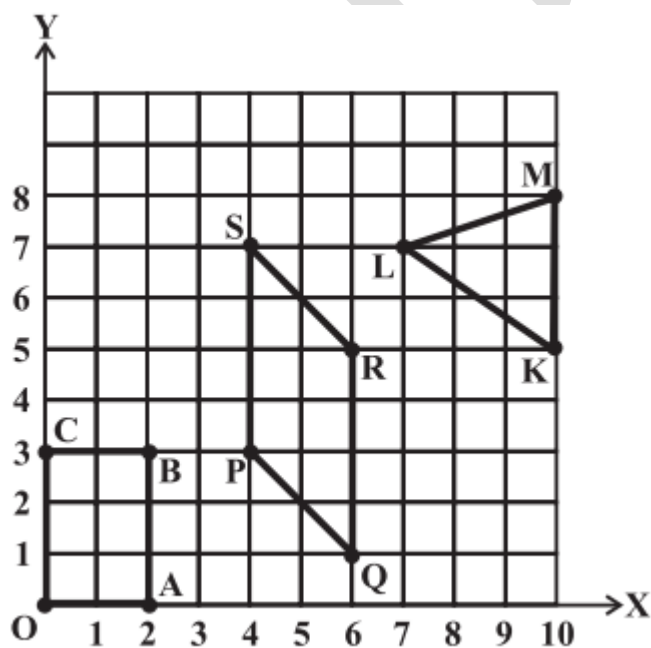*Sol.* Given: Points (2, 3) and (3, 2).

Firstly, we plot the points on a graph.

And now we join these points by the line which intersect the x-axis at the point (5, 0) and the y-axis at the point (0, 5).

Q.3 Write the coordinates of the vertices of each of these adjoining figures.

Sol. The coordinates of the vertices of each of the given figures:
Coordinates for figure OCBA: O (0, 0), A(2, 0), B(2, 3), C(0, 3)
Coordinates for figure PQRS: P (4, 3), Q(6, 1), R(6, 5), S(4, 7)
Coordinates for figure KLM: K (10, 5), L(7, 7), M(10, 8)

Q.4 State whether True or False. Correct that are false.
(i) A point whose x coordinate is zero and y-coordinate is non-zero will lie on the y-axis.
(ii) A point whose y coordinate is zero and x-coordinate is 5 will lie on y-axis.
(iii) The coordinates of the origin are (0, 0).

Sol. (i) This statement is True. Since on y-axis, x coordinate always zero.

(ii) This statement is False. Since, if y-coordinate is zero and x-coordinate is 5 then it will be on x-axis.

(iii) This statement is True.