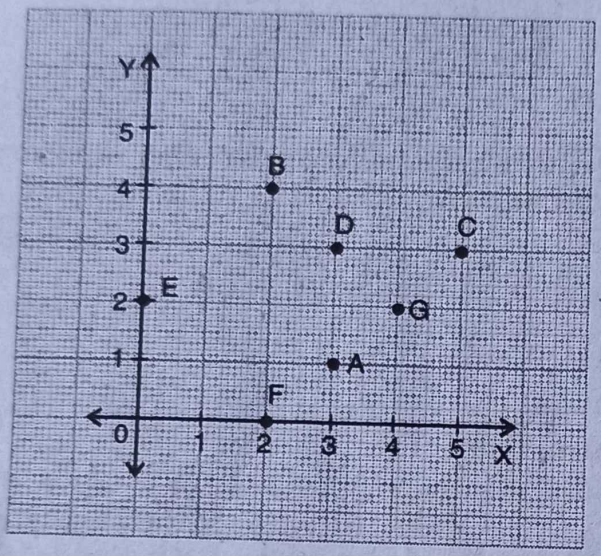
13 INTRODUCTION TO GRAPHS

TEXT BOOK EXERCISE 13.1

Q. 1. From the given figure choose the letter that indicates the location of the points.



(*i*) (0, 2) (*ii*) (2, 4)
(*iii*) (3, 3) (*iv*) (5, 3)
(*v*) (4, 2) (*vi*) (3, 1)
(*vii*) (2, 0)

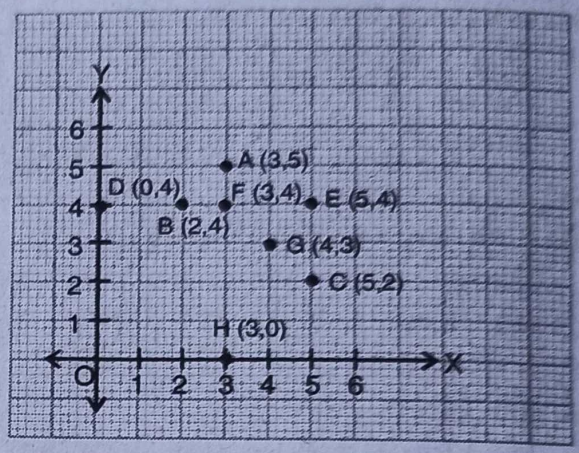
Solution.

(*i*) (0, 2) is point E
(*ii*) (2, 4) is point B.
(*iii*) (3, 3) is point D
(*iv*) (5, 3) is point C.
(*v*) (4, 2) is point G
(*vi*) (3, 1) is point A.
(*vii*) (2, 0) is point F.

Q. 2. Plot the following points on the graph paper :

(*i*) A (3, 5) (*ii*) B (2, 4)
(*iii*) C (5, 2) (*iv*) D (0, 4)
(*v*) E (5, 4) (*vi*) F (3, 4)
(*vii*) G (4, 3) (*viii*) H (3, 0)

Solution.



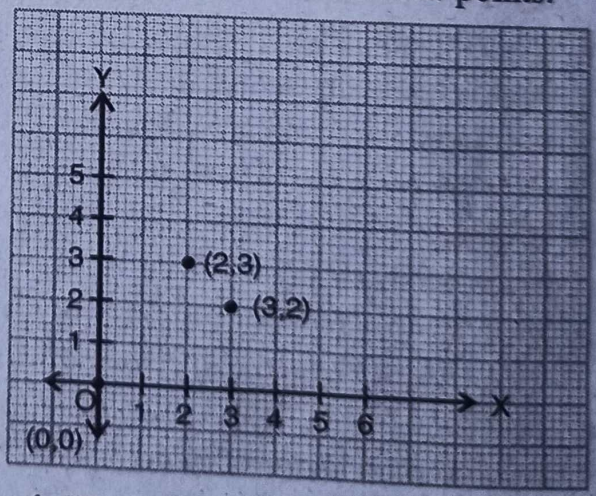
Q. 3. Plot the points (2, 3) and (3, 2) on a graph paper check both are plotted on same location.

Solution. As in (2, 3) x-coordinate is 2 and y-coordinate is 3.

On graph sheet draw the X-axis and Y-axis. Start from O (0, 0) and move 2 units to the right and then 3 units up, you reach the point (2, 3).

Similarly, locate the point (3, 2)

From the graph you can see that the points (2, 3) and (3, 2) are two different points.



Q. 4. Plot the following points on a graph sheet. Verify if they lie on a line

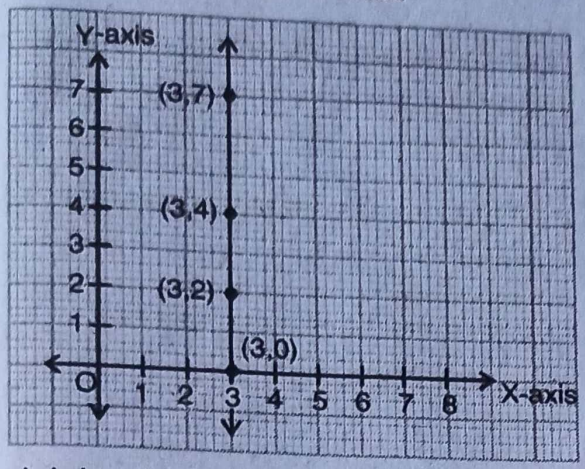
(*a*) (3, 7); (3, 4); (3, 2); (3, 0)
(*b*) (0, 0); (2, 2); (4, 4); (6, 6)

(*c*) (0, 4); (1, 4); (2, 4); (3, 4)

(*d*) (2, 1); (3, 2); (4, 3); (5, 5)

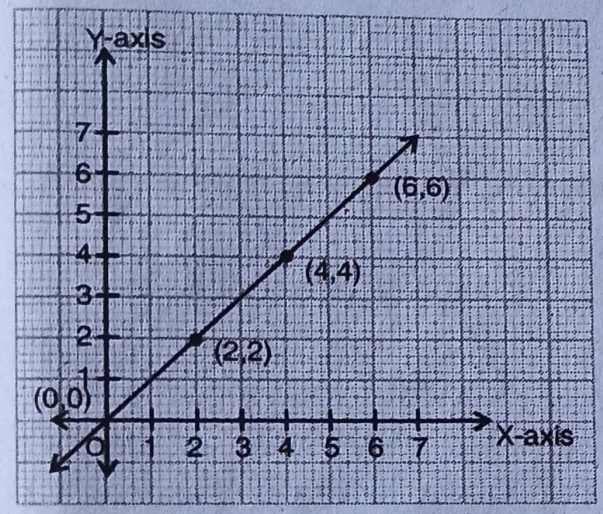
Solution.

(*a*) Plot the given points (3, 7), (3, 4), (3, 2) and (3, 0) on X-axis and Y-axis.



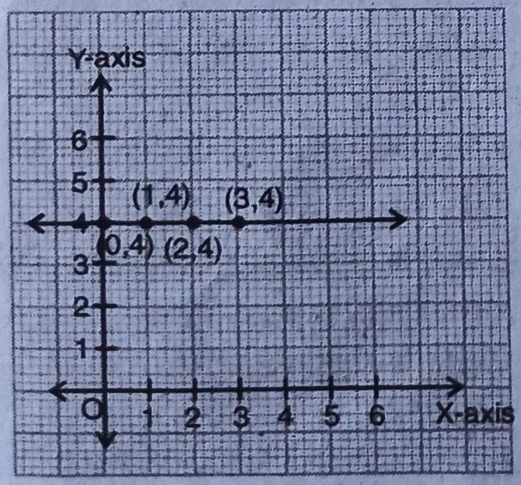
By joining these points, we came to know that these points lie on a straight line.

(*b*) Plot the given points (0, 0), (2, 2), (4, 4) and (6, 6) on X-axis and Y-axis.



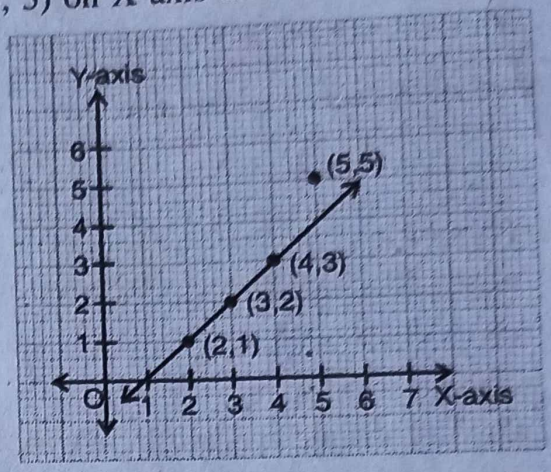
By joining these points we came to know that these points lie on a straight line.

(*c*) Plot the given points (0, 4), (1, 4), (2, 4) and (3, 4) on X-axis and Y-axis.



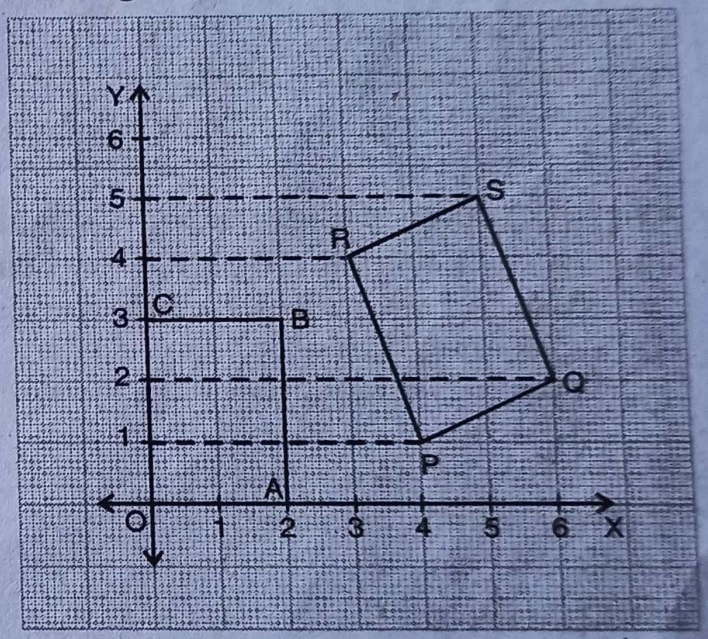
By joining these points we came to know that these points lie on a straight line.

(*d*) Plot the given points (2, 1), (3, 2), (4, 3) and (5, 5) on X-axis and Y-axis.



By joining these points we came to know that these points do not lie on a straight line.

Q. 5. Write the co-ordinate of the vertices of each figure shown in graph



Solution. The vertices of each figure in the graph are represented as below :

(*i*) For rectangle OABC

O (0,0), A (2, 0), B (2, 3), C (0, 3).

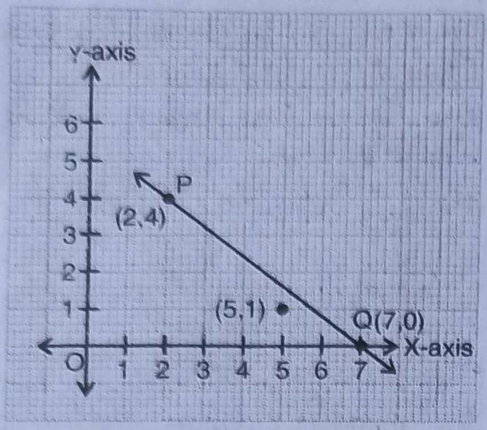
(*ii*) For parallelogram PQSR

P (4, 1), Q (6, 2), R (3, 4), S (5, 5).

Q. 6. Draw a line joining (2, 4) and (7, 0). Check whether the point (5, 1) lies on it.

Solution. Plot the points P (2, 4) and Q (7, 0) on X-axis and Y-axis. By joining these points a line PQ is obtained. Now, plot point (2, 4) on X-axis and Y-axis. We observe that :

(5, 1) does lie on the line joining the points (2, 4) and (7, 0)



Q. 7. True or False :

(*i*) The coordinates of origin are (0, 0).

(*ii*) Any point on y-axis has x-coordinate zero.

(*iii*) Any point on x-axis has y-coordinate zero.

(*iv*) The points (4, 3) and (3, 4) represents the same point.

(*v*) The ordinate of (5, 2) is 5.

Ans. (*i*) True (*ii*) True (*iii*) True (*iv*) False (*v*) False.

Q. 8. Choose the correct answer :

(*i*) The point (1, 0) lies on :

(*a*) *x*-axis (*b*) *y*-axis

(*c*) origin (*d*) none.

(*ii*) Which of the following coordinate is on *x*-axis ?

(*a*) (0, 3) (*b*) (1, 2)

(*c*) (2, 3) (*d*) (4, 0).

(*iii*) Which of the following coordinate is on *y*-axis ?

(*a*) (0, 3) (*b*) (1, 2)

(*c*) (2, 3) (*d*) (4, 0).

(*iv*) The abscissa of (2, 7) is :

(*a*) 7 (*b*) 2

(*c*) 0 (*d*) None.

(*v*) The ordinate of (7, 4) is :

(*a*) 0 (*b*) 7

(*c*) 4 (*d*) None.

Ans. (*i*) (*a*) *x*-axis (*ii*) (*d*) (4, 0)

(*iii*) (*a*) (0, 3) (*iv*) (*b*) 2 (*v*) (*c*) 4.