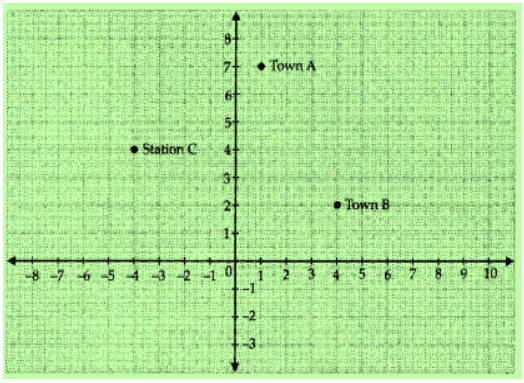
Co-ordinate Geometry

X

Extra Question

1. If the distance between the points (4, k) and (1,0) is 5, then what can be the possible values of it?
2. Find distance between A(10 cos θ, 0) and B(0, 10 sin θ).
3. Find the coordinates of the point on y-axis which is nearest to the point (- 2, 5).
4. Find the fourth vertex of parallelogram ABCD whose three vertices are A(- 2, 3), B(6, 7) and C(8, 3).
5. If the point (0, 2) is equidistant from the points (3, k) and (k, 5), find the value of k.
6. Find the ratio in which y-axis divides the line segment joining the points A(5, -6) and B(-1, -4). Also find the coordinates of the point of division.
7. Let P and Q be the points of trisection of the line segment joining the points A (2, -2) and B (-7, 4) such that P is nearer to A.
8. Point A(- 1, y) and B(5, 7) lie on a circle with centre O(2, -3y). Find the values of y. Hence find the radius of the circle.
9. The x-coordinate of a point P is twice its y-coordinate. If P is equidistant from Q(2, – 5) and R(-3,6), find the coordinates of P.
10. Prove that the points (3, 0), (6, 4) and (-1, 3) are the vertices of a right angled isosceles triangle.
11. The line segment joining the points A(2, 1) and B(5, -8) is trisected by the points P and Q, where P is nearer to A. If the point P also lies on the line 2r -y+k=0, find the value of k.
12. Show that (a, a), (- a, – a) and (-√3a, √3a) are vertices of an equilateral triangle.
13. Two friends Seema and Aditya work in the same office at Delhi. In the Christmas vacations, both decided to go to their hometowns represented by Town A and Town B respectively in the figure given below. Town A and Town B are connected by trains from the same station C (in the given figure) in Delhi. Based on the given situation, answer the following questions.



    i) Who will travel more distance, Seema or Aditya, to reach to their hometown?
    ii) Seema and Aditya planned to meet at a location D situated at a point D represented by the mid-point of the line joining the points represented by Town A and Town B. Find the coordinates of the point represented by the point D.
14. Show that ΔABC, where A(-2, 0), B(2, 0), C(0, 2) and ΔPQR where P(- 4, 0), Q(4, 0), R(0, 4) are similar triangles.
15. If the point P(x, y) is equidistant from the points A(a + b, b – a) and B(a – b, a + b). Prove that bx = ay.
16. The line-segment joining the points (3, -4) and (1, 2) is trisected at the points P and Q. If the coordinates of P and Q are (p, -2), $(\frac{5}{3}, q)$, respectively, then find the values of p and q.
17. Determine the ratio in which the line 3x + y -9 = 0 divides the segment joining the points (1, 3) and (2,7).