CBSE

COORDINATE GEOMETRY WS 3

Class 10 - Mathematics

Section A

1. The distance between the points (0, 5) and (-3, 1) is: **[1]**

   a) 5 units
   b) 25 units
   c) 8 units
   d) 3 units

2. Three points A(1, -2), 8(3, 4) and C(4, 7) form **[1]**

   a) An obtuse angle
   b) An equilateral triangle
   c) A straight line
   d) A right-angled triangle

3. The coordinates of the point on x -axis which are equidistant from the points (-3, 4) and (2, 5) are **[1]**

   a) (-23, 0)
   b) (20, 0)
   c) None of these
   d) (4/5, 0)

4. The distance between the points A (0, 6) and B (0, –2) is **[1]**

   a) 8
   b) 4
   c) 6
   d) 2

5. A circle drawn with origin as the centre passes through $(\frac{13}{2}, 0)$. The point which does not lie in the interior of the circle is **[1]**

   a) $\frac{-3}{4}, 1$
   b) $2, \frac{7}{3}$
   c) $5, \frac{-1}{2}$
   d) $\left(-6, \frac{5}{2}\right)$

6. The distance between the points (6, 2) and (-6, 2) is: **[1]**

   a) 12 units
   b) $6\sqrt{2}$ units
   c) $2\sqrt{6}$ units
   d) 6 units

7. The distance of the point (4, 7) from the x-axis is **[1]**

   a) 7
   b) 4
   c) 11
   d) $\sqrt{65}$

8. Points (1, 0) and (-1, 0) lies on **[1]**

   a) line x + y = 0
   b) y-axis
   c) x-axis
   d) line x - y = 0

9. The distance between the points (a, a) and $(-\sqrt{3}a, \sqrt{3}a)$ is **[1]**

   a) $2\sqrt{2}$ units
   b) $3\sqrt{2}a$ units
   c) 2 units
   d) $2a\sqrt{2}$ units

10. The distance between the points (sinθ, cosθ) and (cosθ, – sinθ) is **[1]**

a) $\sqrt{2}$ units

b) 2 units

c) $2\sqrt{2}$ units

d) $\sqrt{\sin\theta + \cos\theta}$ units

11. The distance between the points $(0, 2\sqrt{5})$ and $(-2\sqrt{5}, 0)$ is **[1]**

a) 0

b) $2\sqrt{10}$ units

c) $4\sqrt{10}$ units

d) $2\sqrt{20}$ units

12. If three points (0,0), (3, $\sqrt{3}$) and (3, λ) form an equilateral triangle, then λ = **[1]**

a) -4

b) None of these

c) -3

d) 2

13. ABCD is a rectangle whose three vertices are B (4,0), C (4,3) and D (0,3). The length of one of its diagonals is **[1]**

a) 5

b) 3

c) 4

d) 25

14. AOBC is a rectangle whose three vertices are A(0, 3), O(0, 0) and B(5, 0). The length of its diagonal is **[1]**

a) 5

b) 3

c) $\sqrt{34}$

d) 4

15. The perimeter of the triangle formed by the points (0, 0), (1, 0) and (0, 1) is **[1]**

a) $2 + \sqrt{2}$

b) 3

c) $\sqrt{2} + 1$

d) $1 \pm \sqrt{2}$

16. The point of intersection of the x-axis and y-axis is called **[1]**

a) ordinate

b) abscissa

c) quardant

d) origin

17. If the distance between the points (2, -2) and (-1, x) is 5, one of the values of x is **[1]**

a) -2

b) -1

c) 1

d) 2

18. If the distance between the points A(4, p) and B(1, 0) is 5 units, then the value(s) of p is (are) **[1]**

a) 0

b) 4 only

c) -4 only

d) ± 4

19. _____ is an algebraic tool for studying geometry. **[1]**

a) Statistics

b) Algebraic expression

c) Coordinate Geometry

d) Trigonometry

20. The distance between the points (c, 0) and (0, - c) is: **[1]**

a) 2c units

b) c units

c) c$\sqrt{2}$ units

d) $2\sqrt{c}$ units

21. Radius of circumcircle of a triangle ABC is $5\sqrt{10}$ units. If point P is equidistant from A (1, 3), B(-3, 5) and C(5, -1) then AP = **[1]**

a) $5\sqrt{10}$ units

b) 25 units

c) $5\sqrt{5}$ units

d) 5 units

22. If the points (x, y), (1, 2) and (7, 0) are collinear, then the relation between x and y is given by **[1]**

a) 3x - y - 7 = 0

b) 3x + y + 7 = 0

c) x + 3y - 7 = 0

d) x - 3y + 7 = 0

23. The abscissa of any point on the x-axis is **[1]**

a) – 1

b) 1

c) x

d) 0

Section B

Question No. 24 to 27 are based on the given text. Read the text carefully and answer the questions: **[4]**

In order to facilitate smooth passage of the parade, movement of traffic on certain roads leading to the route of the Parade and Tableaux ah rays restricted. To avoid traffic on the road Delhi Police decided to construct a rectangular route plan, as shown in the figure.

24. If Q is the mid point of BC, then what are the coordinates of Q?

25. What is the length of the sides of quadrilateral PQRS?

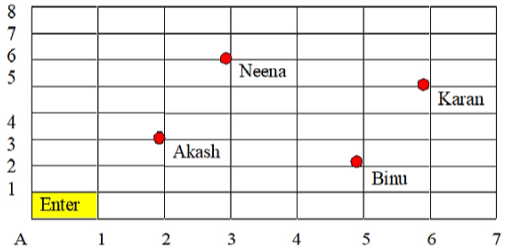
26. What is the length of route PQRS?

27. What is the length of route ABCD?

Question No. 28 to 31 are based on the given text. Read the text carefully and answer the questions: **[4]**

Karan went to the Lab near to his home for COVID 19 test along with his family members.

The seats in the waiting area were as per the norms of distancing during this pandemic (as shown in the figure). His family member took their seats surrounded by red circular area.



28. What is the distance between Neena and Karan?

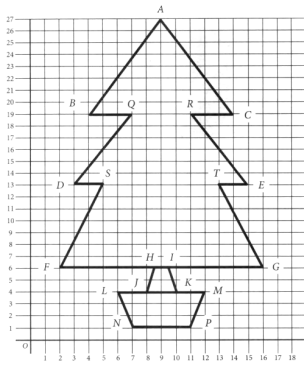
29. What are the coordinates of seat of Akash?

30. What will be the coordinates of a point exactly between Akash and Binu where a person can be?

31. Find distance between Binu and Karan.

Question No. 32 to 35 are based on the given text. Read the text carefully and answer the questions: **[4]**

The design of Christmas tree is shown in the following graph:



32. What is the distance of point A from x-axis?

33. What is the Length of BC?

34. What is the Length of FG?

35. What is the perimeter of its trunk LMPN?

Question No. 36 to 39 are based on the given text. Read the text carefully and answer the questions: **[4]**

The Chief Minister of Delhi launched the, 'Switch Delhi', an electric vehicle mass awareness campaign in the National Capital. The government has also issued tenders for setting up 100 charging stations across the city. Each station will have five charging points. For demo charging station is set up along a straight line and has charging points at $A\left(\frac{-7}{3}, 0\right)$, $B\left(0, \frac{7}{4}\right)$, C(3, 4), D(7, 7) and E(x, y). Also, the distance between C and E is 10 units.

36. What is the distance DE?

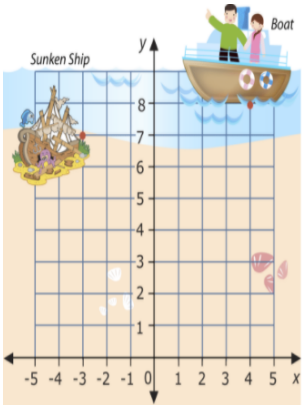
37. What is the value of x + y?

38. Points C, D, E are collinear or not?

39. What is the ratio in which B divides AC?

Question No. 40 to 43 are based on the given text. Read the text carefully and answer the questions: **[4]**

Mary and John are very excited because they are going to go on a dive to see a sunken ship. The dive is quite shallow which is unusual because most sunken ship dives are found at depths that are too deep for two junior divers. However, this one is at 40 feet, so the two divers can go to see it.



They have the following map to chart their course. John wants to figure out exactly how far the boat will be from the sunken ship. Use the information in this lesson to help John figure out the following.

40. What are the coordinates of the boat and the sunken ship respectively?
41. How much distance will Mary and John swim through the water from the boat to the sunken ship?
42. If each square represents 160 cubic feet of water, how many cubic feet of water will Mary and John swim through from the boat to the sunken ship?
43. If the distance between the points (x, -1) and (3, 2) is 5, then what is the value of x?

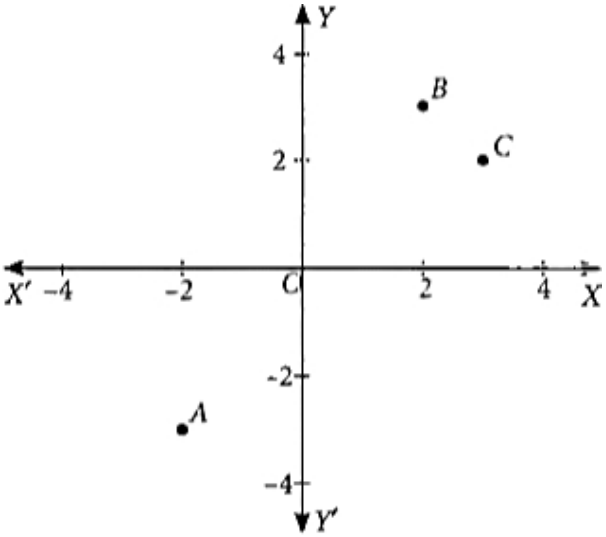
Question No. 44 to 47 are based on the given text. Read the text carefully and answer the questions: **[4]**

There are two routes to travel from source A to destination B by bus. First bus reaches at B via point C and second bus reaches from A to B directly. The position of A, B and C are represented in the following graph:

Based on the above information, answer the following questions.

Scale: x-axis : 1 unit = 1 km

y-axis: 1 unit = 1 km



44. If the fare for the second bus is ₹15/km, then what will be the fare to reach to the destination by this bus?
45. What is the distance between A and B?
46. What is the distance between A and C?
47. If it is assumed that both buses have same speed, then by which bus do you want to travel from A to B?

Question No. 48 to 51 are based on the given text. Read the text carefully and answer the questions: **[4]**

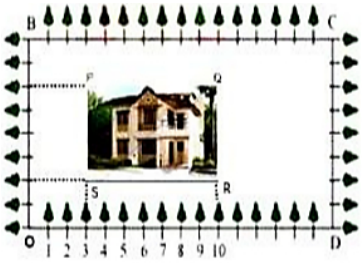
Using Cartesian Coordinates we mark a point on a graph by how far along and how far up it is.

The left-right (horizontal) direction is commonly called X-axis.

The up-down (vertical) direction is commonly called Y-axis.

In Green Park, New Delhi Suresh is having a rectangular plot ABCD as shown in the following figure. Sapling of Gulmohar is planted on the boundary at a distance of 1 m from each other. In the plot, Suresh builds his house in the

rectangular area PQRS. In the remaining part of plot, Suresh wants to plant grass.



48. Find the coordinates of the midpoints of the diagonal QS.
49. Find the length and breadth of rectangle PQRS?
50. Find Area of rectangle PQRS.
51. Find the diagonal of rectangle.

Question No. 52 to 55 are based on the given text. Read the text carefully and answer the questions: **[4]**

A satellite image of a colony is shown below. In this view, a particular house is pointed out by a flag, which is situated at the point of intersection of x and y-axes. If we go 2 cm east and 3 cm north from the house, then we reach to a Grocery store. If we go 4 cm west and 6 cm south from the house, then we reach to an Electricians's shop. If we go 6 cm east and 8 cm south from the house, then we reach to a food cart. If we go 6 cm west and 8 cm north from the house, then we reach a bus stand.

Scale:

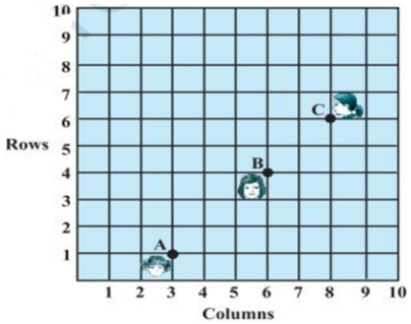
x-axis : 1 cm = 1 unit

y-axis : 1 cm = 1 unit

52. What is the distance between the grocery store and food cart?
53. What is the distance of the bus stand from the house?
54. If the grocery store and electricians shop lie on a line, then what will be the ratio of distance of house from grocery store to that from electrician’s shop?
55. What are the ratio of distances of the house from bus stand to food cart?

Question No. 56 to 59 are based on the given text. Read the text carefully and answer the questions: **[4]**

There is a function in the school. Anishka, Bhawna and Charu are standing in a rectangular ground at points A, B and C respectively as shown in the figure. They are ready to perform an aerobic dance.



56. How far is Charu from y-axis?

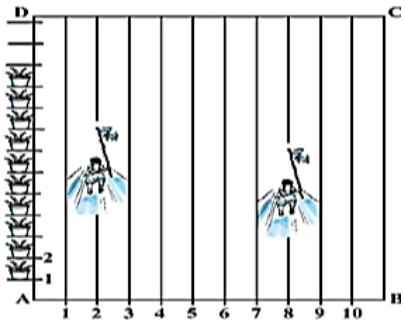
57. Find distance between Anishka and Bhawna.

58. Check whether AB + BC = AC?

59. Is A, B and C lies in a straight line?

Question No. 60 to 63 are based on the given text. Read the text carefully and answer the questions: **[4]**

To conduct Sports Day activities, in your rectangular shaped school ground ABCD, lines have been drawn with chalk powder at a distance of 1 m each. 100 flower pots have been placed at a distance of 1 m from each other along AD, as shown in Fig. Sarika runs the distance AD on the 2nd line and posts a green flag. Priya runs the distance AD on the eighth line and posts a red flag. (take the position of feet for calculation)



60. What co-ordinates you will use for Green Flag?

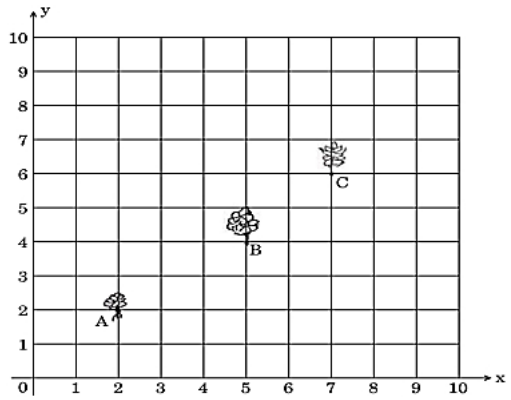
61. What is the distance between the green flag and the red flag?

62. If Monika wants to post a blue flag adjacently in between these two flags. Where she will post a blue flag?

63. What is the distance between green and blue flag?

Question No. 64 to 67 are based on the given text. Read the text carefully and answer the questions: **[4]**

Reena has a 10 m $\times$ 10 m kitchen garden attached to her kitchen. She divides it into a 10 $\times$ 10 grid and wants to grow some vegetables and herbs used in the kitchen. She puts some soil and manure in that and sow a green chilly plant at A, a coriander plant at B and a tomato plant at C. Her friend Kavita visited the garden and praised the plants grown there. She pointed out that they seem to be in a straight line. See the below diagram carefully:



64. Find the distance between A and B?

65. Find the mid-point of the distance AB?

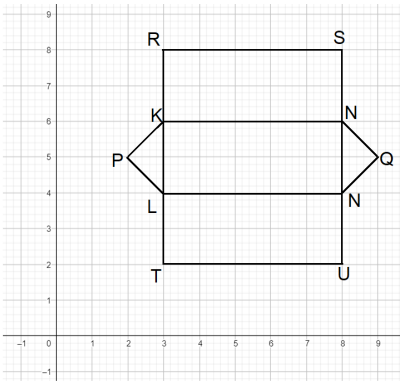
66. Find the distance between B and C?

67. Find the mid point of BC.

Question No. 68 to 71 are based on the given text. Read the text carefully and answer the questions: **[4]**

The camping alpine tent is usually made using high-quality canvas and it is waterproof. These alpine tents are mostly used in hilly areas, as the snow will not settle on the tent and make it damp. It is easy to layout and one need not use a manual to set it up. One alpine tent is shown in the figure given below, which has two triangular faces and three

rectangular faces. Also, the image of canvas on graph paper is shown in the adjacent figure.



68. What is the distance of point Q from y-axis?

69. What are the coordinates of U?

70. What is the distance between the points P and Q?

71. What is the Perimeter of image of a rectangular face?

Question No. 72 to 75 are based on the given text. Read the text carefully and answer the questions: **[4]**

Using Cartesian Coordinates we mark a point on a graph by how far along and how far up it is.

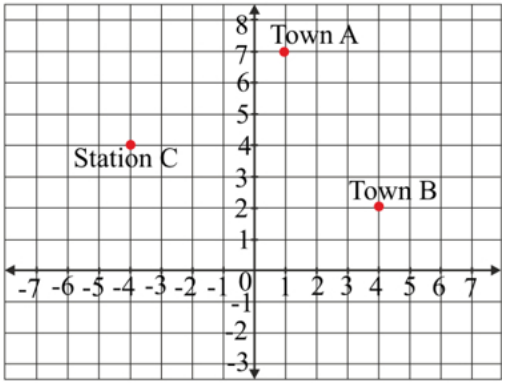
The left-right (horizontal) direction is commonly called X-axis.

The up-down (vertical) direction is commonly called Y-axis.

When we include negative values, the x and y axes divide the space up into 4 pieces.

Read the information given above and below:

Two friends Veena and Arun work in the same office in Delhi. In the Christmas vacations, both decided to go 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.



72. Who will travel more distance to reach their home?

73. Find the location of the station.

74. Find in which ratio Y-axis divide Town B and Station.

75. Find the distance between Town A and Town B.