



# INDIAN SCHOOL AL WADI AL KABIR

**Class X**, Mathematics

**Worksheet-Coordinate Geometry (DTQ) 13 - 08 - 2026**

| Q. No.                    | Questions of 2 marks each                                                                                                                                                                                                               |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.                        | Find the coordinates of the point C which lies on the line AB produced such that $AC = 2 BC$ , where coordinates of point A and B are $(-1, 7)$ and $(4, -3)$ respectively.                                                             |
| 2.                        | If the points $A(4, 5)$ , $(B(m, 6)$ , $C(4, 3)$ and $(D(1, n)$ taken in this order are the vertices of a parallelogram ABCD, then find the values of m and n.                                                                          |
| 3.                        | Diagonals AC and BD of square ABCD intersect at P. Coordinates of points B and D are $(9, -2)$ and $(1, 6)$ respectively.<br>(i) Find the co-ordinates of point P.<br>(ii) Find the length of the side of the square.                   |
| 4.                        | Find the coordinates of a point on the line $x + y = 5$ which is equidistant from $(6, 4)$ and $(5, 2)$ .                                                                                                                               |
| 5.                        | Using distance formula, prove that the points $A(2, 3)$ , $B(-7, 0)$ and $C(-1, 2)$ are collinear.                                                                                                                                      |
| Questions of 3 marks each |                                                                                                                                                                                                                                         |
| 6.                        | Find the coordinates of the points of trisection of the line segment joining the points $A(-1, 4)$ and $B(-3, -2)$ .                                                                                                                    |
| 7.                        | Find the ratio in which the point $\left(\frac{8}{y}, \frac{12}{5}\right)$ divides the line segment joining the points $(1, 2)$ and $(2, 3)$ . Also, find the value of y.                                                               |
| 8.                        | ABCD is a rectangle formed by the points $A(-1, -1)$ , $B(-1, 6)$ , $C(3, 6)$ and $D(3, -1)$ . P, Q, R and S are mid – points of sides AB, BC, CD and DA respectively. Show that diagonals of the quadrilateral PQRS bisect each other. |
| 9.                        | $P(x, y)$ , $Q(-2, -3)$ and $R(2, 3)$ are the vertices of a right triangle PQR right angled at P. Find the relationship between x and y. Hence, find all possible values of x for which $y = 2$ .                                       |
| 10.                       | A circle with centre at $(2, 1)$ passes through the points $A(5, 6)$ and $B(-3, K)$ . Find the value(s) of K. Hence find length of chord AB.                                                                                            |
| 11.                       | Prove that the point P dividing the line segment joining the points $A(-1, 7)$ and $B(4, -3)$ in the ratio $3 : 2$ , lies on the line $x - 3y = -1$ . Also find length of PA and PB.                                                    |

### Questions of 5 marks each

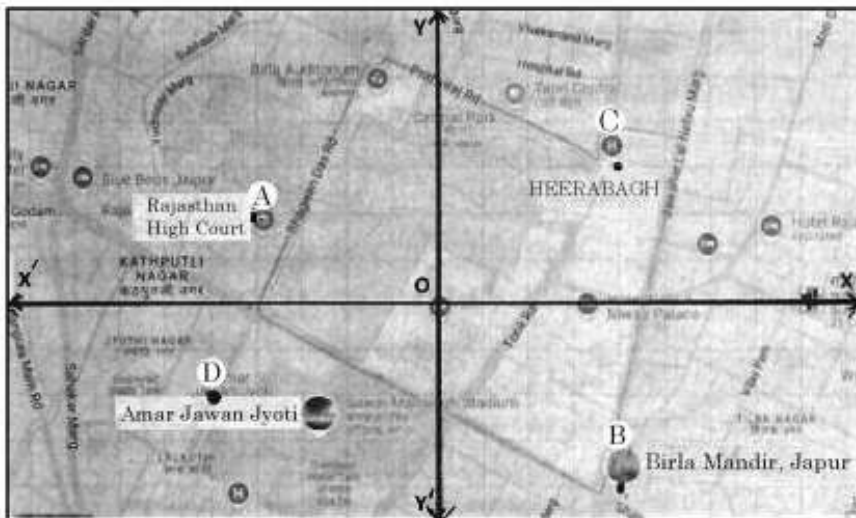
- |     |                                                                                                                                                                              |
|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12. | Find the ratio in which the line $x - 3y = 0$ divides the line segment joining the points $(-2, -5)$ and $(6, 3)$ . Also, find the coordinates of the point of intersection. |
| 13. | Prove that the abscissa (x-coordinate) of a point P which is equidistant from points $A(7, 1)$ and $B(3, 5)$ is 2 more than its ordinate (y-coordinate).                     |

### Questions of 5 marks each

#### 14. Case Study Based

Observe the map of Jaipur city placed on a Cartesian plane. Taking Rambagh Palace as origin, the location of some places are given below:

- **Point A  $(-4, 2)$ :** Rajasthan High Court
- **Point B  $(4, -4)$ :** Birla Mandir
- **Point C  $(4, 3)$ :** Heera Bagh
- **Point D  $(-5, -2)$ :** Amar Jawan Jyoti

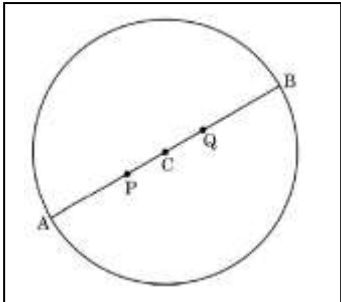


Based on the above, answer the following questions:

- (i) Advocate Rehana stays at Heera Bagh. How much distance she has to cover daily to go to the court and coming back home?
- (ii) There is a crossing on X-axis which divides AD in a certain ratio. Find the ratio.
- (iii) (a) Is Birla Mandir equidistant from Heera Bagh and Amar Jawan Jyoti? Justify your answer.

**OR**

- (iii) (b) Using section formula, show that points A, O and B are not collinear.

|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
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| 15. | <p>In a society, there is a circular park having two gates. The gates are placed at points A(10,20) and B(50, 50), as shown in the figure below. Two fountains are installed at points P and Q on AB such that <math>AP = PQ = QB</math>.</p> <div style="display: flex; justify-content: space-around; align-items: center;">   </div> <p>Based on the above information, answer the following questions :</p> <p>(i) Find the coordinates of the centre C.</p> <p>(ii) Find the radius of the circular park.</p> <p>(iii) (a) Find the coordinates of the point P.</p> <p style="text-align: center;">OR</p> <p>(b) Find the distance of the fountain at Q from gate A.</p> |
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|                |    |                                        |    |                                                                                                                       |    |                                                                                      |    |                                                    |
|----------------|----|----------------------------------------|----|-----------------------------------------------------------------------------------------------------------------------|----|--------------------------------------------------------------------------------------|----|----------------------------------------------------|
| <b>Answers</b> |    |                                        |    |                                                                                                                       |    |                                                                                      |    |                                                    |
| <b>Answers</b> | 1  | (9, -13)                               | 2  | $m = 7, n = 2$                                                                                                        | 3  | (5, 2), 8                                                                            | 4  | $\left(-\frac{3}{2}, \frac{13}{2}\right)$          |
|                | 5  | To be proved                           | 6  | $P\left(-\frac{5}{3}, 2\right),$<br>$Q\left(-\frac{7}{3}, 0\right)$                                                   | 7  | $2:3, \frac{40}{7}$                                                                  | 8  | To be proved                                       |
|                | 9  | $x^2 + y^2 = 13$<br>For $y=2, x=\pm 3$ | 10 | $k = -2, 4,$<br>For $k = -2,$<br>$AB = \sqrt{128}$ or $8\sqrt{2}$<br>For $k = 4,$<br>$AB = \sqrt{68}$ or $2\sqrt{17}$ | 11 | $PA = \sqrt{45}$ or $3\sqrt{5},$<br>$PB = \sqrt{20}$ or $2\sqrt{5}$                  | 12 | $13:3,$<br>$\left(\frac{9}{2}, \frac{3}{2}\right)$ |
|                | 13 | To be proved                           | 14 | (i) $2\sqrt{65}$ units<br>(ii) 1:19 (iii)<br>(a) $BC \neq BD.$<br>Not equidistant.<br>(iii) (b) not collinear         | 15 | (i) (30, 35) (ii) 25 units (iii) $P\left(\frac{70}{3}, 30\right)$ OR $\frac{100}{3}$ |    |                                                    |