

CLASS X- MATHEMATICS

COORDINATE GEOMETRY

ASSIGNMENT-1

MULTIPLE CHOICE QUESTION - 1.1

- The points $(-a, -b)$, $(0, 0)$, (a, b) and (a^2, ab) are
(A) Collinear (B) Vertices of a parallelogram
(C) Vertices of a rectangle (D) None of these
- If the points $(5, 1)$, $(1, p)$ & $(4, 2)$ are collinear then the value of p will be
(A) 1 (B) 5 (C) 2 (D) -2
- Length of the median from B on AC where $A(-1, 3)$, $B(1, -1)$, $(5, 1)$ is
(A) $\sqrt{18}$ (B) $\sqrt{10}$ (C) $2\sqrt{3}$ (D) 4
- The points $(0, -1)$, $(-2, 3)$, $(6, 7)$ and $(8, 3)$ are -
(A) Collinear (B) Vertices of a parallelogram which is not a rectangle
(C) Verticals of a rectangle, which is not a square (D) None of these
- If $(3, -4)$ and $(-6, 5)$ are the extremities of the diagonal of a parallelogram and $(-2, 1)$ is third vertex, then its fourth vertex is -
(A) $(-1, 0)$ (B) $(0, -1)$ (C) $(-1, 1)$ (D) None of these
- The area of a triangle whose vertices are $(a, c + a)$, (a, c) and $(-a, c - a)$ are
(A) a^2 (B) b^2 (C) c^2 (D) $a^2 + c^2$
- The are of the quadrilateral's the coordinates of whose verticals are $(1, -2)$, $(6, 2)$, $(5, 3)$ and $(3, 4)$ are
(A) $\frac{9}{2}$ (B) 5 (C) $\frac{11}{2}$ (D) 11

SUBJECTIVE QUESTION - 1.2

- Find the distance between the points :
(i) $P(-6, 7)$ and $Q(-1, -5)$.
(ii) $A(at_1^2, 2at_1)$ and $B(at_2^2, 2at_2)$.
- If the point (x, y) is equidistant from the points $(a + b, b - a)$ and $(a - b, a + b)$, prove that $bx = ay$.
- Find the value of x , if the distance between the points $(x, -1)$ and $(3, 2)$ is 5.
- Show that the points (a, a) , $(-a, -a)$ and $(-\sqrt{3a}, \sqrt{3a})$ are the vertices of an equilateral triangle.
- Show that the points $(1, 1)$, $(-2, 7)$ and $(3, -3)$ are collinear.
- Prove that $(2, -2)$, $(-2, 1)$ and $(5, 2)$ are the vertices of a right angled triangle. Find the area of the triangle and the length of the hypotenuse.

7. If A(-1, 3), B(1, -1) and C(5, 1) are the vertices of a triangle ABC, find the length of the median passing through the vertex A.
8. Show that the points A(1,2), B(5, 4), C(3, 8) and D(-1, 6) are the vertices of a square.
9. The abscissa of a point is twice its ordinate and the sum of the abscissa and the ordinate is -6. What are the coordinates of the point ?
10. If two vertices of triangle are (3, 7) and (-1, 5) and its centroid is (1, 3), find the coordinates of the third vertex.
11. If the mid point of the line-segment joining the points (-7, 14) and (K, 4) is (a, b), where $2a + 3b = 5$, find the value of K.
12. Prove that the points (a, 0), (0, b) and (1, 1) are collinear if $\frac{1}{a} + \frac{1}{b} = 1$.
13. The co-ordinates of two points A & B are (3, 4) and (5, -2) respectively. Find the co-ordinate of point P if PA = PB, the area of $\triangle APB = 10$.
14. Four points A(6, 3), B(-3, 5), C(4, -2) and D(x, 3x) are given in such a way that $\frac{\text{Area}(\triangle DBC)}{\text{Area}(\triangle ABC)} = \frac{1}{2}$ find x.
15. Show that the points A(2, -2), B(14, 10), C(11, 13) and D(-1, 1) are the vertices of a rectangle. [CBSE-2016]
16. Determine the ratio in which the point (-6, a) divides the join of A(-3, -1) and B(-8, 9). Also find the value of a. [CBSE 2016]
17. Find a point on X-axis which is equidistant from the points (7, 6) and (-3, 4). [CBSE - 2019]
18. 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) and (5/3,) respectively. Find the value of p and q. [CBSE 2019]
19. If A(-2, -1), B(a, 0), C(4, b) and D(1, 2) are the vertices of a parallelogram, find the values of a and b. [CBSE -2016]
20. The coordinates of one end point of a diameter of a circle are (4, -1) and the coordinates of the centre of the circle are (1, -3). Find the coordinates of the other end of the diameter. [CBSE-2017]
21. The point R divides the line segment AB, where A(-4, 0) and B(0, 6) are such that $AR = \frac{3}{4} AB$. Find the co-ordinates of R. (CBSE - 2018)

22. For what value of k are the points $(1, 1)$, $(3, k)$ and $(-1, 4)$ collinear ?
[CBSE - 2018]
23. Find the area of the $\triangle ABC$ with vertices $A(-5, 7)$, $B(-4, -5)$ and $C(4, 5)$.
[CBSE - 2018]
24. If the point $P(x, y)$ is equidistant from the points $A(3, 6)$ and $B(-3, 4)$ prove that $3x + y - 5 = 0$.
[CBSE - 2018]
25. If $A(4, -8)$, $B(3, 6)$ and $C(5, -4)$ are the vertices of a $\triangle ABC$, D is the mid-point of BC and P is point on AD joined such that $\frac{AP}{PD} = 2$ find the coordinates of P .
[CBSE - 2019]