

**GIRLS' HIGH SCHOOL AND COLLEGE, PRAYAGRAJ**

**ASSIGNMENT-2**

**SESSION - 2020-2021**

**CLASS-X (A,B,C,D,E,F)**

**SUBJECT- MATHEMATICS**

**TOPIC:** Co-ordinate Geometry

**CHAPTER:** Section Formula

**INSTRUCTIONS:** The parents to ensure that their ward watches the video instructions for this assignment by clicking on the given link:-

<https://youtu.be/o2it7MMrChU>

She should revise the lesson given in the book and then work on the assignment. The completed assignment is to be downloaded and filed/pasted in the subject file/copy and kept ready for submission. The day, date and procedure of submission shall be notified later.

Reference Book: Concise mathematics Class X – By R. K. Bansal.

**SOLVE THE FOLLOWING QUESTIONS**

**Question 1** - Calculate the co-ordinates of the point P which divides the line segment joining:-

- (i) A (1,3) and B (5,9) in the ratio 1:2

- (ii) A (-4,6) and B (3,-5) in the ratio 3:2

**Question 2** - In what ratio is the join of (4, 3) and (2, -6) is divided by the x-axis? Also, find the co-ordinates of the point of intersection.

**Question 3** - P is a point on the line joining A (4, 3) and B (-2, 6) such that  $5AP=2BP$ . Find the co-ordinates of P.

**Question 4** - If A= (-4, 3) and B= (8,-6)

- (i) Find the length of AB.
- (ii) In what ratio is the line joining A and B is divided by the x-axis?.

**Question 5** - The line segment joining A (4, 7) and B (-6, -2) is intercepted by y-axis at the point K. Write down the abscissa of the point K. Hence ,find the ratio in which K divides AB. Also, find the co-ordinates of the point K.

**Question 6** - Given a line segment AB joining the points A (-4, 6) and B (8, -3). Find:

- (i) the ratio in which AB is divided by the y-axis.
- (ii) find the co-ordinates of the points of intersection.
- (iii) the length of AB.

**Question 7** - Show that A (3, -2) is a point of trisection of the line segment joining the points (2, 1) and (5, -8). Also, find the co-ordinates of the other point of trisection.

**Question 8** - Calculate the ratio in which the line joining A (6, 5) and B (4, -3) is divided by the line  $y=2$ .

**Question 9** - The line joining P (-4, 5) and Q (3, 2) intersects the y-axis at point R. PM and QN are perpendiculars from P and Q on the x-axis.

Find:-

- (i) the ratio PR: RQ.
- (ii) the co-ordinates of R.
- (iii) the area of the quadrilateral PMNQ.

**Question 10** - Find the mid-point of the line segment joining the points:-

- (i) (-6, 7) and (3, 5)
- (ii) (5, -3) and (-1, 7)

**Question 11**- (-5, 2), (3, -6) and (7, 4) are the vertices of a triangle. Find the length of its median through the vertex (3, -6).

**Question 12** - One end of the diameter of a circle is (-2, 5). Find the co-ordinates of the other end of it, if the centre of the circle is (2, -1).

**Question 13** - A (-1, 0), B (1, 3) and D (3, 5) are the vertices of a parallelogram ABCD. Find the co-ordinates of vertex C.

**Question 14** - AB is a diameter of a circle with centre C = (-2, 5). If A = (3, -7), find

- (i) the length of the radius AC.
- (ii) the coordinates of B.

**Question 15** - The mid-point of the line segment joining (4a, 2b-3) and (-4, 3b) is (2, -2a). Find the values of a and b.

**Question 16** - The points (2, -1), (-1, 4) and (-2, 2) are the mid-points of the sides of a triangle. Find its vertices.

**Question 17** - Points P (a, -4), Q (-2, b) and R (0, 2) are collinear. If Q lies between P and R, such that  $PR=2QR$ , calculate the values of a and b.

**Question 18** - Find the co-ordinates of the centroid of a triangle ABC whose vertices are:

A (-1, 3), B (1, -1) and C (5, 1).

**Question 19** - The co-ordinates of the centroid of a triangle PQR are (2, -5). If Q = (-6, 5) and R = (11, 8); calculate the co-ordinates of vertex P.

**Question 20** - A (5, x), B (-4, 3) and C (y, -2) are the vertices of the triangle ABC whose centroid is the origin. Calculate the values of x and y.

**Question 21** – A (-4, 2) , B( 0, 2) and C ( -2, -4) are vertices of a triangle ABC. P, Q and R are mid-points of sides BC, CA, and AB respectively. Show that the centroid of triangle PQR is the same as the centroid of triangle ABC.

**Question 22** - Calculate the ratio in which the line joining A (-4, 2) and B(3, 6) is divided by point P (x, 3). Also, find (i) x                      (ii) length of AP.