

VGR Coaching Centre  
IX - Maths

2 marks :- (any 8)

- 1) Find the distance between the points  $(-4, 3)$ ,  $(2, -3)$
- 2) The point  $(x, y)$  is equidistant from the points  $(3, 4)$  and  $(-5, 6)$ . Find a relation between  $x$  and  $y$ .
- 3) The point  $(3, -4)$  is the centre of a circle. If  $AB$  is a diameter of the circle and  $B$  is  $(5, -6)$ , find the coordinates of  $A$ .
- 4) If  $(x, 3)$ ,  $(6, 4)$ ,  $(8, 2)$  and  $(9, 4)$  are the vertices of a parallelogram taken in order, then find the value of  $x$  and  $y$ .
- 5) Find the coordinates of a point which divides the line segment joining the points  $A(4, -3)$  and  $B(9, 7)$  in the ratio  $3:2$
- 6) Find the centroid of the triangle whose vertices are  $A(6, -1)$ ,  $B(8, 3)$  and  $C(10, -5)$
- 7) If the centroid of a triangle is at  $(-2, 1)$  and two of its vertices are  $(1, -6)$

and  $(-5, 2)$ , then find the third vertex of the triangle.

8) Find the mid point of the line segment joining the points

(i)  $(a, b)$  and  $(a+2b, 2a-b)$

9) In which quadrant does the following points lie?

(a)  $(3, -8)$

(b)  $(-1, -3)$

(c)  $(2, 5)$

(d)  $(-7, 3)$

10) Determine whether the given set of points in each case are collinear or not.

$(7, -2), (5, 1), (3, 4)$

5 marks :- (any 8)

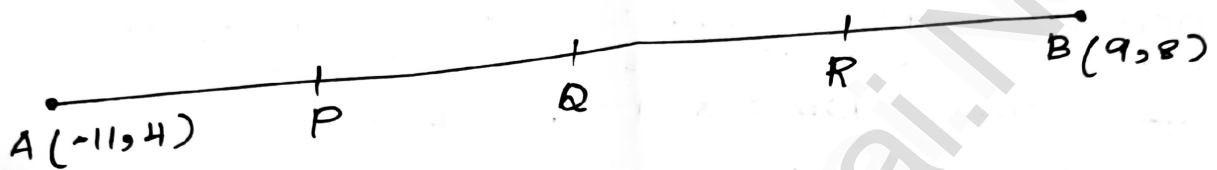
1) Show that the points  $A(-4, -3), B(3, 1), C(3, 6), D(-4, 2)$  taken in that order form the vertices of a parallelogram

2) Show that  $(4, 3)$  is the centre of the circle passing through the points  $(9, 3), (7, -1), (-1, 3)$ . Also find its radius.

3) Verify that the following points taken in order form the vertices of a rhombus.

$$A(3, -2), B(7, 6), C(-1, 2), D(-5, -6)$$

4) Find the points which divide the line segment joining  $A(-11, 4)$  and  $B(9, 8)$  into four equal parts.



5) The mid points of the sides of a triangle are  $(5, 1)$ ,  $(3, -5)$  and  $(-5, -1)$ . Find the coordinates of the vertices of the triangle.

6) In what ratio does the point  $P(-2, 4)$  divide the line segment joining the points  $A(-3, 6)$  and  $B(1, -2)$  internally?

7) Find the coordinates of a point  $P$  on the line segment joining  $A(1, 2)$  and  $B(6, 7)$  such a way that  $AP = \frac{2}{5} AB$ .

8) Find the coordinates of the points of trisection of the line segment joining the points  $A(-5, 6)$  and  $B(4, -3)$ .

- 9) Find the length of median through A of a triangle whose vertices are  $A(-1, 3)$ ,  $B(1, -1)$  and  $C(5, 1)$
- 10) The vertices of triangle are  $(1, 2)$ ,  $(h, -3)$  and  $(-4, k)$ . If the centroid of triangle is at point  $(5, -1)$  then find the value of  $\sqrt{(h+k)^2 + (h+3k)^2}$

### Geometry :-

- 11) Construct the centroid of  $\Delta PQR$  whose sides are  $pq = 8 \text{ cm}$ ,  $QR = 6 \text{ cm}$ ,  $Rp = 7 \text{ cm}$
- 12) Draw the graph for the following:

$$y = \left(\frac{2}{3}\right)x + 3$$