COORDINATE GEOMETRY

Disance between two points $A(x_1, y_1)$ and $B(x_2, y_2) = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$

Centroid of a triangle and its Coordinates: The medians of a triangle are concurrent. Their point of concurrence IS called centroid. It divides each median in the ratio 2:1.

The coordinates of centroid of a triangle with vertices $A(x_1, y_1)$, $B(x_2, y_2)$ and $C(x_3, y_3)$ are given by

$$\frac{x_1 + x_2 + x_3}{3}, \quad \frac{y_1 + y_2 + y_3}{3})$$

Q.1 Find the distance of the point (-6,8) from the origin.

Q.2 If the points A(1,2), B(0,0) and C(a,b) are collinear, then what is the relation between and b.

Q.3 Find the ratio in which the line segment joining the points (-3,10) and (6,-8) is divided by (-1,6)

Q.4 Find the value of a, so that the point (3,a) lie on the line 2x-3y=5

Q.5 The coordinates of the points P and Q are respectively (4, -3) and (-1, 7). Find the abscissa of a point R on the line segment PQ such that PR/PQ= 3/5

Q.6 Point P(5,-3) is one of the two points of trisection of the line segment joining the points A(7,-2) and B(1,-5). State true or false and justify your answer.

Q.7 The x-coordinate of a point P is twice its y-coordinate. If P is equidistant from Q(2,-5) and R(-3,6). Find the coordinates of P.

Q.8 Find the ratio in which the point (-3,k) divides the segment joining the points (-5,-4) and (-2,3).

Q.9 Find the ratio in which y-axis divides the line segment joining the points A(5,-6) and B(-1,-4).Also find the coordinates of point of division.

Q.10 AOBC is a rectangle whose three vertices are A(0,3),O(0,0) and B(5,0). Find the length of its diagonal.

Q.11 Find the ratio in which the line segment joining the points P(3,-6) and Q(5,3) is divided by the X-axis.

Q.12 Check whether (5, -2) , (6, 4) and (7, -2) are the vertices of an isosceles triangle.

Q.13 If P and Q be the points of trisection of the line segment joining the points A(2,-2) and B(-7, 4) such that P is nearer to

A. Find the coordinates of P and Q.