

ICSE CLASS 10 SECTION AND MIDPOINT FORMULA WORKSHEET

- 1) In what ratio does the point $M(p, -1)$ divide the line segment joining the points $A(1, -3)$ and $B(6, 2)$? Hence find the value of p .
- 2) $A(-4, 4)$, $B(x, -1)$ and $C(6, y)$ are the vertices of triangle ABC . If the centroid of this triangle ABC is at the origin, find the values of x and y .
- 3) $A(2, 5)$, $B(-1, 2)$, and $C(5, 8)$ are the vertices of triangle ABC . P and Q are points on AB and AC respectively such that $AP:PB = AQ:QC = 1:2$.
 - (a) Find the co-ordinates of points P and Q
 - (b) show that $BC = 3 \cdot PQ$
- 4) show that the points (a, b) , $(a+3, b+4)$, $(a-1, b+7)$ and $(a-4, b+3)$ are the vertices of a parallelogram.
- 5) what point on x -axis is equidistant from the points $(6, 7)$ and $(4, -3)$?
- 6) In general point on y -axis is represented as -----
- 7) In general point on x -axis is represented as -----
- 8) EQUATION parallel to x -axis is -----
- 9) Equation parallel to y -axis is -----
- 10) Find the ratio in which the line $2x+3y-5=0$ divides the line segment joining the points $(8, -9)$ and $(2, 1)$. Also, find the co-ordinates of the point of division.
- 11) if the mid point of the line segment joining the points $A(3, 4)$, $(k, 6)$ is $P(x, y)$ and $x+y-10=0$, find the value of k .
- 12) Find the co-ordinates of the point Q on x -axis which lies on the perpendicular bisector of the line segment joining the points $A(-5, -2)$ and $B(4, 2)$. Name the type of the triangle QAB .
- 13) Find the co-ordinates of the circumcenter of the triangle whose vertices are $(3, 0)$, $(-1, -6)$ and $(4, -1)$. Also find its circumradius.
- 14) Find the ratio in which the two co-ordinate axes divide the line segment joining the points $(-2, 5)$ and $(1, -9)$.
- 15) the point P divides the join of $(2, 1)$ and $(-3, 6)$ in the ratio $2:3$. Does P lie on the line $x-5y+15=0$?
- 16) if $P(9a-2, -b)$ divide the line segment joining the points $A(3a+1, -3)$ and $B(8a, 5)$ in the ratio $3:1$. find the values of a and b .
- 17) $P(1, -2)$ is a point on the line segment $A(3, -6)$ and $B(x, y)$ such that $AP:PB$ is equal to $2:3$. Find the co-ordinates of B .

18) Prove that the points $A(-5,4)$ $B(-1,-2)$ and $C(5,2)$ are the vertices of an isosceles right angled triangle. Find the co-ordinates of D so that $ABCD$ is a square.

19) The line joining the points $(2,-1)$ and $(5,-8)$ is trisected at the points P and Q . If point P lies on the line $2x-y+k=0$, find the value of k . Also find the co-ordinates of point Q .

20) $A(20,0)$ and $B(10,-20)$ are two fixed points. Find the co-ordinates of the point P in AB such that $3PB=AB$. Also, find the co-ordinates of some other point Q in AB such that $AB=6AQ$.

