

MATHS WORKSHEET, CLASS - X

Chapter - 7 Coordinate Geometry

Q1 Tick the correct answer:

- i) A line segment is of length 10 units. If the coordinates of its one end are $(1, 4)$ and the coordinate of the other end is -2 , then its abscissa are:
- a) $7, -9$ (b) $9, -7$ (c) $-7, -9$ (d) $9, 7$
- (ii) The area of a triangle with vertices $(a, b+c)$, $(b, c+a)$ and $(c, a+b)$
- a) $(a+b+c)^2$ (b) 0 (c) $a+b+c$ (d) abc
- (iii) The perpendicular bisector of the line segment joining the points $A(1, 5)$ and $B(4, 6)$ cuts the y -axis at
- a) $(0, 13)$ (b) $(0, -13)$ (c) $(0, 12)$ (d) $(13, 0)$
- (iv) If the area of a triangle formed by the points $(k, 2k)$, $(-2, 6)$ and $(3, 1)$ is 20 square units, then $k =$
- a) 5 (b) 4 (c) $3/5$ (d) $2/3$
- (v) The points which lies on the perpendicular bisector of the line segment joining the points $A(-2, -5)$ and $B(2, 5)$ is
- (a) $0, 0$ (b) $(0, 2)$ (c) $(2, 0)$ (d) $(-2, 0)$
- (vi) The co-ordinates of the point A and B are $(3, -5)$ and $(1, -2)$ respectively. Then the ordinate of the point C on the line segment AB, such that $\frac{AC}{AB} = \frac{4}{7}$ is
- a) $\frac{23}{7}$ (b) $-\frac{23}{7}$ (c) $\frac{26}{7}$ (d) $-\frac{26}{7}$
- (vii) The perimeter of a triangle with vertices $(0, 4)$, $(0, 0)$ and $(3, 0)$ is
- a) 5 (b) 12 (c) 11 (d) 7.5
- (viii) If the points $(1, x)$, $(5, 2)$ and $(9, 5)$ are collinear, then value of x is
- (a) $5/2$ (b) $-5/2$ (c) -1 (d) 1
- (ix) The end points of diameter of circle are $(2, 4)$ and $(-3, -1)$. The radius of circle is
- (a) $5\sqrt{2}/2$ (b) $5\sqrt{2}$ (c) $3\sqrt{2}$ (d) $\pm \frac{5\sqrt{2}}{2}$

(x) If the centroid of the triangle formed by $(3, x)$, $(-1, 5)$ and $(y, -6)$ is at $(0, 1)$ then (x, y) is
(a) $(-2, 4)$ (b) $(4, -2)$ (c) $(-4, -2)$ (d) $(4, 2)$

(xi) The fourth vertex D of a parallelogram ABCD, whose three vertices are A $(-2, 5)$, B $(6, 9)$ and C $(8, 5)$ is
(a) $(1, 0)$ (b) $(-1, 0)$ (c) $(0, 1)$ (d) $(0, -1)$

(xii) The point which divides the line segment joining the points $(5, 4)$ and $(-6, -7)$ in the ratio $1:3$ internally lies in the
(a) I quadrant (b) II quadrant (c) III quadrant (d) IV quadrant

Q2 → If A $(1, 2)$, B $(4, 3)$ and C $(6, 6)$ are the three vertices of a parallelogram ABCD, find the co-ordinates of the fourth vertex D.

Q3 → If A $(2, 2)$, B $(-4, 4)$ and C $(5, -8)$ are the vertices of a triangle, then find the length of the median through vertex C.

Q4 → If the distance between the points $(x, 0)$ and $(0, 3)$ is 5, what are the values of x ?

Q5 → If the centroid of the triangle formed by the points A (a, b) , B (b, c) and C (c, a) is at the origin, what is value of $\frac{a^2}{bc} + \frac{b^2}{ac} + \frac{c^2}{ab}$?

Q6 → If the mid-point of a segment joining A $[\frac{x}{2}, \frac{y+1}{2}]$ and B $(x+1, y-3)$ is C $(5, -2)$. Find x, y .

Q7 → Find the co-ordinates of the centre of the circle passing through the points $(0, 0)$, $(-2, 1)$ and $(-3, 2)$. Also, find the radius.

Q8 → Find the co-ordinates of the point Q on the 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 triangle formed by points A, B and Q.

Q9 → Name the type of $\triangle ABC$ formed by the points A $(\sqrt{2}, \sqrt{2})$, B $(-\sqrt{2}, -\sqrt{2})$ and C $(-\sqrt{2}, \sqrt{2})$.

Q10 → The line segment joining the points $(3, -4)$ and $(1, 2)$ is trisected at the points P and Q. If the co-ordinates of P and Q are $(p, -2)$ and $(\frac{5}{3}, q)$ respectively. Find the values of p and q .

Q11 → If the point P $(m, 3)$ lies on the line segment joining the points A $[-\frac{2}{5}, 6]$ and B $(2, 8)$. Find the values of m .

Q12 → Point P divides the line segment joining the points A $(-1, 3)$ and B $(9, 8)$ such that $\frac{AP}{BP} = \frac{k}{1}$. If P lies $x - y + 2 = 0$, find value of k.

Q13 → Find the ratio in which the line $x + 3y - 14 = 0$ divides the line segment joining the points A $(-2, 4)$ and B $(3, 7)$.

Q14 → If the points (p, q) , (m, n) and $(p-m, q-n)$ are collinear, show that $pn = qm$.

Q15 → In what ratio does the x-axis divide the line segment joining the points $(-4, 6)$ and $(-1, 7)$? Find the co-ordinates of point of division.

Q16 → If $D(-\frac{1}{2}, \frac{5}{2})$, $E(7, 3)$ and $F(\frac{7}{2}, \frac{7}{2})$ are the mid-points of sides of $\triangle ABC$, find the area of the $\triangle ABC$.

Q17 → The centre of circle is $(2a, a-7)$. Find the values of 'a' if the circle passes through the point $(11, -9)$ and has diameter $10\sqrt{2}$ units.

Q18 → Find the co-ordinates of the points which divide the line segment joining A $(5, -6)$ and B $(-1, 8)$ into four equal parts.

Q19 → The area of a triangle is 5 square units. Two of its vertices are $(2, 1)$ and $(3, -2)$. The third vertex lies on the line $y = x + 3$.

Find the third vertex.

Q20 → Find the third vertex of a triangle, if two of its vertices are $(2, 1)$ and $(0, -2)$ and the centroid is at the origin.

Q21 → If the points A $(1, -2)$, B $(2, 3)$, C $(a, 2)$ and D $(-4, -3)$ form a parallelogram. Find the value of a parallelogram and height, taking AB as base.

Q22 → Show that the points (a, a) , $(-a, a)$ and $(-\sqrt{3}a, \sqrt{3}a)$ were the vertices of an equilateral triangle. Also find its area.

Q23 → Find the area of the quadrilateral formed, if any, by the points A $(2, -1)$, B $(3, 4)$, C $(-2, 3)$ and D $(2, 3)$.

Q24 → Name the type of quadrilateral formed by joining the points A $(-4, 2)$, B $(-3, -5)$, C $(3, -2)$ and D $(2, 3)$.

Q25 → If $(-4, 3)$ and $(4, 3)$ are the two vertices of an equilateral triangle, find the co-ordinates of the third vertex, given that the origin lies in

the interior of the triangle.

Q26 → The two opposite vertices of a square are $(-2, 3)$ and $(4, 3)$. Find the co-ordinates of the other two vertices.