

MATHS WORKSHEET , CLASS - XChapter - 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) $\frac{3}{5}$ (d) $\frac{2}{3}$
- 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) $\frac{5}{2}$ (b) $-\frac{5}{2}$ (c) -1 (d) 1
- ix) The end points of diameter of circle are $(2, 4)$ and $(-3, -1)$. The radius of circle is
- (a) $\frac{5\sqrt{2}}{2}$ (b) $\frac{3\sqrt{2}}{2}$ (c) $\pm \frac{5\sqrt{2}}{2}$

(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 coordinates 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 $(-\sqrt{6}, \sqrt{6})$.

Q10 → The line segment joining the points $(3, -4)$ and $(1, 2)$ is bisected 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 $(-\sqrt{3}a, \sqrt{3}a)$ are 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.