GRADE: X   COORDINATE GEOMETRY

ASSIGNMENT 1

1. The distance between A(1, 3) and B(x, 7) is 5. Find the values of x.
2. Find a point on the x-axis which is equidistant from (7, 6) and (– 3, 4).
3. Find the coordinates of the points which divides the line joining A(– 1, 3) and B(5, – 6) internally in the ratio 1 : 2.
4. The coordinates of the midpoint of the line segment joining (3, 5) and (x, y) is (2, 3). Find the values of x and y.
5. The midpoint of the line segment joining (2a, 4) and (–2, 3b) is (1, 2a+1). Find the values of a and b.
6. In what ratio does the point (1/2, 6) divide the line joining the line segment joining the points (3, 5) and (–7, 9)?
7. Find the value of k for which the points (2, 5), (k, 11/2) and (4, 6) are collinear.

ASSIGNMENT 2

1. The line segment joining the points (1, –2) and (–3, 4) is trisected. Find the coordinates of the points of trisection.
2. Show that the points (7, 3), (3, 0), (0, –4) and (4, –1) are the vertices of a rhombus.
3. Show that the points (2, –2), (14, 10), (11, 13) and (–1, 1) are the vertices of a rectangle.
4. Determine the ratio in which the point P(m, 6) divides the join of A(–4, 3) and B(2, 8). Also find the value of m.
5. The area of a triangle is 5 sq. units. Two vertices are (2, 1) and (3, –2). The third vertex lies on $y = x + 3$. Find the third vertex.
6. Show that the points P(a, b+c), Q(b, c+a) and R(c, a+b) are collinear.
7. Find the area of the quadrilateral whose vertices are (1, 1), (7, –3), (12, 2) and (7, 21).

ASSIGNMENT 3

1. Find the length of the medians of △ ABC whose vertices are A(7, –3), B(5, 3) and C(3, –1).
2. In what ratio does the line $x - y - 2 = 0$ divide the line segment joining (3, –1) and (8, 9)?
3. The base BC of an equilateral △ ABC lies on y-axis. The coordinates of point C are (0, –3). If the origin is in the midpoint of base BC, find the coordinates of the points A and B.
4. Three consecutive vertices of a parallelogram are (1, 2), (1, 0) and (4, 0). Find the fourth vertex.
5. If D(3, –2), E(–3, 1) and F(4, –3) are the midpoints of the sides BC, CA and AB respectively of △ ABC, find the coordinates of the vertices A, B and C.
6. Two vertices of an equilateral triangle are (0, 0) and (3, $\sqrt{3}$). Find the coordinates of the third vertex.

ANSWERS

ASSIGNMENT 1

1. 4, –2   2. (3, 0)   3. (1, 0)   4. $x = 1, y = 1$ 5. $a = 2, b = 2$ 6. 1 : 3
7. $k = 3$

ASSIGNMENT 2

1. $(-\dfrac{1}{3}, 0), (-\dfrac{5}{3}, 2)$ 4. 3 : 2 , $m = -\dfrac{2}{5}$ 5. $(\dfrac{7}{2}, \dfrac{13}{2})$ or $(-\dfrac{3}{2}, \dfrac{3}{2})$ 7. 132

ASSIGNMENT 3

1. AD = 5 units, BE = 5 units, CF = $\sqrt{10}$ units   2. 2 : 3
3. A(3$\sqrt{3}$, 0) or (–3$\sqrt{3}$, 0), B(0, 3) 4. (4, 2)   5. A(–2, 0), B(10, –6), C(–4, 2)
6. (0, 2$\sqrt{3}$) or (3, –$\sqrt{3}$).

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