MATHS

BOOKS - NAGEEN MATHS (HINGLISH)

CO-ORDINATE GEOMETRY

Solved Examples

1. Write down the co-ordinates of each points A,B,C,D,E and F as shown in following figure.

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2. Plot the points $A(4, 1), B(-3, 2), C(2, -3), D(-4, 1), E(-4, -4).$

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3. $A(3, 6)$, $B(3, 2)$ and $C(8, 2)$ are the vertices of a rectangle. Plot these points on a graph paper and then use it to find the co-ordinates of vertex D.

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4. On which axis do the given points lie ?

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5. Three vertices of a parallelogram are $A(-2, 2)$, $B(6, 2)$, $C(4, -3)$. Plot these points on a graph paper and hence use it to find co-ordinate of the fourth vertex D. Also, find the co-ordinates of the mid-point of the side CD. What is the area of the parallelogram ?
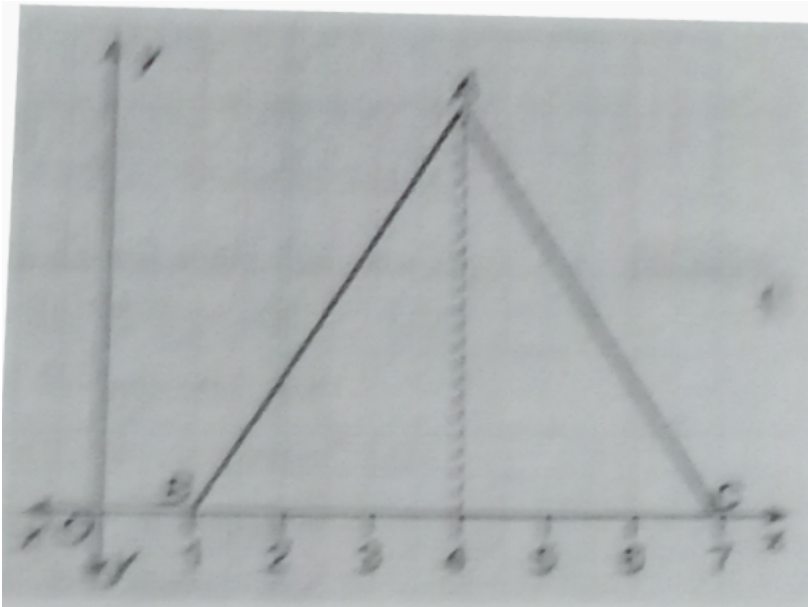
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6. Plot the points $A(0, 2)$, $B(1, 4)$ and $C(-1, 0)$ on a graph paper and check whether they are collinear (lie on the same straight line) or not.

7. In the figure given below. ABC is an equilateral triangle. Find the co-ordinates of the vertices.

8. Find the value of x and y, if $(x + 5, 2y - x + 3) = (-3, 4)$.

A. $x = -4, y = -\dfrac{7}{2}$

B. $x = -9, y = -\dfrac{5}{2}$

C. $x = -8, y = -\dfrac{7}{2}$

D. $x = -3, y = -\dfrac{3}{2}$

Answer: C

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9. The base f an equilateral triangle with side $2a$ lies along the y-axis such that the mid point of the base is at the origin. Find the vertices of the triangle.

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10. Find the mirror image of $A(-4, 2)$ in

(i) the x-axis

(ii) the y-axis

(iii) the origin

Give the name of the figure formed by point A and the points obtained in (i) , (ii) and (iii) above. Also find the distance between poitns A and the point obtained in (iii).

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Problems From Ncert Exemplar

1. (Street Plan): A city has two main roads which cross each other at the centre of the city. These two roads are along the NorthSouth direction and EastWest direction. All the other streets of the city run parallel to these roads and are 200 m apar

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2. Plot the points given in the following table on the plane, choosing suitable units of distance on the axes.

x	-2	-1	0	1	3
y	8	7	-1.25	3	-1

3. Plot the following points and write the name of the figure obtained by joining, them in order p(-3,2), Q(-7,-3), R(6,-3) and S(2,2).

4. Points $A(5, 3), B(- 2, 3)$ and $D(5, - 4)$ are three vertices of a square $ABCD$. Plot these points on a graph paper and hence, find the coordinate of the vertex C.

5. Write the coordinates of the vertices of a rectangle whose length and breadth are 5 and 3 units respectively, one vertex at origin, the longer

side on the x-axis and of the vertices in the third quadrant.

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6. Plot point $P(1, 0)$, $Q(4, 0)$ and $S(1, 3)$. Find the coordinates of R so that $PQRS$ is a square.

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Revision Exercise

1. Write the co-ordinates of origin .

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2. If we move along x-axis then find the value of ordinate.

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3. if we move along y-axis then find the value of abscissa.

4. Plot the points on a graph paper.

$A(3, 6), B(- 3, 6), C(6, - 3), D(- 3, - 6), E(0, - 6), F(- 6, 0), G(-$

.

5. If (a,b) are the co-ordinates of a point where $b = 0$, where will the point

lie.

   A. on y-axis

   B. on x-axis

   C. first quadrant

   D. second quadrant

Answer: B

6. Plot the points $A(2, 0), B(8, 0), C(8, 0), D(8, 4)$. Complete the rectangle ABCD and find the co-ordinates of point D.

7. In rectangle OABC, point O is the origin, $OA = 10$ units along x-axis and $AB = 8$ units. Find the co-ordinates of vertices A,B and C.

8. By plotting the following points check whether they are collinear or not

(i) $(1, 1), (2, 2), (4, 4)$

(ii) $(1, 0), (-3, 0), (0, 0)$

(iii) $(2, -2), (0, 0), (-3, 4)$

Exercise

1. Plot the following points on the same graph paper :

(i) $(7, 6)$

(ii) $(6, 7)$

(iii) $(-4, 3)$

(iv) $(3, -4)$

(v) $(-4, -4)$

(vi) $(-6, -4)$

(vii) $(7, -6)$

(viii) $(6, -7)$

2. Use the given graph to find the co-ordinates of the points, satisfying the given condition.
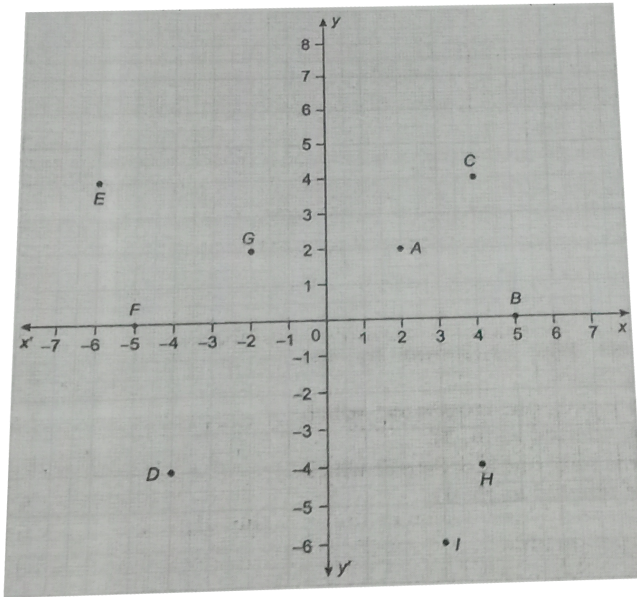
(i) Whose abscissa is 2

(ii) Whose ordinates is 4

(iii) Whose abscissa is 5

(iv) Whose ordinates is -6

(v) Whose abscissa is -4

(vi) Whose abscissa is 4

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3. In each of the following, the co-ordinates of the three vertices of a rectangle ABCD are given. By plotting the given points, find in each case the co-ordinates of the fourth vertex.

(i) $A(2, 0)$, $B(4, 0)$, $C(2, 2)$

(ii) $A(-4, -2)$, $B(-2, -2)$, $C(-4, 2)$

(iii) $A(3, 0)$, $B(-3, 0)$, $C(-3, -3)$

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4. In which quadrant does the given points lie

(i) $(4, -2)$

(ii) $(-2, -2)$

(iii) $(4, 3)$

(iv) $(-3, 4)$

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5. $A(-2, 2)$, $B(8, 2)$ and $C(4, -4)$ are the vertice of a parallelogram ABCD. By plotting the given points on a graph paper, find the co-ordinates of the fourth vertex D.

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6. $A(-2, 4)$, $C(4, 10)$ and $D(-2, 10)$ are the vertices of a square ABCD. Use the graphical method to find the co-ordinates of fourth vertex B. Also find.

(i) the co-ordinates of mid-point of BC.

(ii) the co-ordinates of point of intersection of the diagonals of the square ABCD.

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7. Plot the point $A(4, 4)$ on a graph paper. Draw perpendicular AP on x-axis and AQ on y-axis and complete the graph. Find the co-ordinates of

P, Q and fourth vertex of the figure. Find the co-ordinates of point of intersection of diagonals.

8. Find the mirror image of the point $A(- 3, 2)$ in x-axis.