MATHS

BOOKS - NCERT EXEMPLAR MATHS (HINGLISH)

COORDINATE GEOMETRY

Coordinate Geometry

1. The distance of the point $P(2, 3)$ from the X-axis is

A. 2

B. 3

C. 1

D. 5

Answer: B

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2. The distance between the points $A(0, 6)$ and $B(0, -2)$ is

A. 8

B. 6

C. 4

D. 2

Answer: A

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3. The distance of the point $P(-6, 8)$ from the origin is

A. 8

B. $2\sqrt{7}$

C. 6

D. 10

Answer: D

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4. The distance between the points $(0, 5)$ and $(-5, 0)$ is

A. 5

B. $5\sqrt{2}$

C. $2\sqrt{5}$

D. 10

Answer: B

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5. If $AOBC$ is a rectangle whose three vertices are $A(0, 3)$,$O(0, 0)$ and $B(5, 0)$, then find the length of its diagonal.

A. 5

B. 3

C. $\sqrt{34}$

D. 4

Answer: C

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6. The perimeter of a triangle with vertices (0,4),(0,0) and (3,0) is

A. 5

B. 12

C. 11

D. $7+\sqrt{5}$

Answer: B

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7. The area of a triangle with vertices A(3,0),B(7,0) and C(8,4) is

A. 14

B. 28

C. 8

D. 6

Answer: C

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8. The points $(-4, 0), (4, 0)$ and $(0, 3)$ are the verticess of a

A. right angle triangle

B. isosceles triangle

C. equilateral triangle

D. scalene triangle

Answer: B

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9. The point which divides the line segment joining the points (7,-6) and (3,4) in ratio $1:2$ internally lies in the

A. I quadrant

B. II quadrant

C. III quadrant

D. Iv quadrant

Answer: D

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10. The point 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)

Answer: A

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11. The fourth vertex D of a parallelogram $ABCD$ whose three vertices are $A(-2, 3)$, $B(6, 7)$ and $C(8, 3)$is

A. $(0, 1)$

B. $(0, -1)$

C. $(-1, 0)$

D. $(1, 0)$

Answer: B

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12. if A(2,1) cuts line P(2,1) and B(8,4) then

A. $AP = \frac{1}{3}AB$

B. $AP = PB$

C. $PB = \frac{1}{3}AB$

D. $AP = \frac{1}{2}AB$

Answer: D

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13. If $P\left(\frac{a}{3}, 4\right)$ is the mid - point of the line segment joining the points $Q(-6, 5)$ and $R(-2, 3)$, then the value of a is

A. -4

B. -12

C. 12

D. -6

Answer: B

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14. 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)

Answer: a

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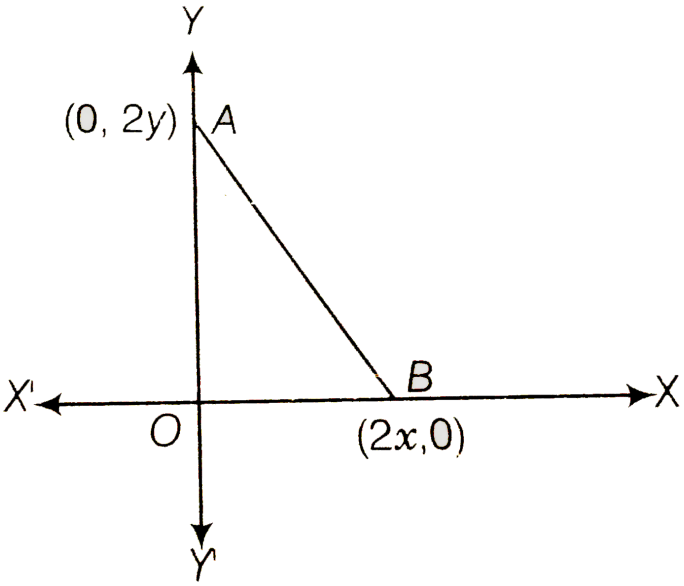
15. The coordinates of the point which is equidistant from the three vertices of the

$\triangle AOB$ as shown in the figure is



A. (x, y)

B. (y, x)

C. $\left(\frac{x}{2}, \frac{y}{2}\right)$

D. $\left(\frac{y}{2}, \frac{x}{2}\right)$

Answer: A

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16. If a circle drawn with origin as the centre passes through $\left(\frac{13}{2}, 0\right)$, then the point which does not lie in the interior of the circle is

A. $\left(\frac{-3}{4}, 1\right)$

B. $\left(2, \frac{7}{3}\right)$

C. $\left(5, \frac{-1}{2}\right)$

D. $\left(-6, \frac{5}{2} \right)$

Answer: d

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17. A line intersects the Y- axis and X-axis at the points P and Q, respectively. If (2,-5) is the mid-point of PQ, then the coordinates of P and Q are, respectively.

A. (0,-5) and (2,0)

B. (0,10) and (-4,0)

C. (0,4) and (-10, 0)

D. (0,-10) and (4,0)

Answer: D

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18. The area of a triangle with vertices (a,b+c), (b,c+a) and (c,a+b) is

A. $(a+b+c)^2$

B. 0

C. (a + b + c)

D. abc

Answer: b

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19. If the distance between the points (4,p) and (1,0) is 5 , then find the value of p.

A. 4 only

B. ± 4

C. $-4 only$

D. 0

Answer: B

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20. If the points A(1,2) , B(0,0) and C (a,b) are collinear , then

A. a=b

B. a=2b

C. 2a=b

D. a=-b

Answer: c

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21. △ ABC with vertices A(0-2,0),B(2,0) and C(0,2) is similar to △ DEF with vertices D(-4,0) ,E(4,0) and F(0,4).

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22. The point P(-4,2) lies on the line segment joining the points A(-4,6) and B (-4,-6).

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23. The points (0,5) , (0,-9) and (3,6) are collinear.

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24. Point P(0,2) is the point of intersection of Y-axis and perpendicular bisector of line segment joining the points A(-1,1) and B(3,3).

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25. The points A(3,1) , B (12,-2) and C(0,2) cannot be vertices of a triangle.

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26. Prove that the points A(4,3), B(6,4), C(5,-6) and D(-3,5) are vertices of a parallelogram.

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27. A circle has its centre at the origin and a point P (5,0) lies on it . The point Q (6,8) lies outside the circle.

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28. The point A (2,7) lies on the perpendicular bisector of the line segment joining the points P (5,-3) and Q(0,-4).

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29. The point P (5,-3) is one of the two points of trisection of line segment joining the points A(7,-2) and B(1,-5).

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30. The points A (-6,10), B(-4,6) and C(3,-8) are collinear such that

$\text{AB} = -\frac{2}{9}AC.$

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31. The points P (-2,4) lies on a circle of radius 6 and centre (3,5).

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32. The points A (-1,-2), B (4,3) ,C (2,5) and D (-3,0) in that order form a rectangle.

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33. Name the type of triangle formed by the points A (-5,6) , B (-4,-2) and C (7,5).

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34. Find the points on the X-axis which are at distance of $2\sqrt{5}$ from the point (7,-4) . How many such points are there ?

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35. What type of quadrilateral do the points $A(2, -2), B(7, 3), C(11, -1)$ and $D(6, -6)$ taken in that order form?

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36. Find the value of a , if the distance between the points A (-3,-14) and B (a,-5) is 9 units.

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37. Find a point which is equidistant from the points A(-5,4) and B (-1,6). How many such points are there ?

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38. 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 the points Q , A and B.

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39. Find the value of m, if the points (5,1), (-2,-3) and (8,2m) are collinear.

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40. If the points A(2,-4) is equidistant from P (3,8) and Q (-10,y), then find the value of y . Also , find distance PQ.

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41. Find the area of the triangle wohose vertices are (-8,4) ,(-6,6) and (-3,9).

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42. In what ratio does the X -axis divide the line segment joining the points (-4,-6) and (-1,7) ? Find the coordinates of the points of division.

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43. Find the ratio in which the point P $\left(\frac{3}{4}, \frac{3}{12}\right)$ divides the line segment joining the points A $\left(\frac{1}{2}, \frac{3}{2}\right)$ and B $(2, -5)$.

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44. If P (9a-2,-b) divides line segment joining A (3a+1,-3) and B(8a,5) in the ratio $3:1$, then find the values of a and b.

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45. If (a,b) is the mid - point of the line segment joining the points A (10,-6), B(k,4) and a-2b =18, then find the value of k and the distance AB.

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46. If the centre of a circle is (2a,a-7) ,then Find the value of a , if the circle passes through the point (11,-9) and has diameter $10\sqrt{2}$ units .

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47. The line segment joining the points A(3,2) and B (5,1) is divided at the point P in the ratio $1:2$ and it lies on the line $3x-18y+k=0$. Find the value of k.

A. 19

B. 18

C. 17

D. 16

Answer: A

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

the area of the $\triangle ABC$.

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49. If the points A (2,9), B (a,5) and C (5,5) are the vertices of a $\triangle ABC$. Right-angled at B, then find the values of a and hence the area of $\triangle ABC$.

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50. Find the coordinates of the point R on the line segment joining the points P$(-1, 3)$ and Q $(2, 5)$ such that PR $= \frac{3}{5}$ PQ.

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51. Find the values of k, if the points A (k+1,2k) ,B (3k,2k+3) and C (5k-1,5k) are collinear.

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52. 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 coordinates of the points of division.

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53. If (-4,3) and (4,3) are two vertices of an equilateral triangle, then find the coordinates of the third vertex, given that the origin lies in the interior of the triangle.

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54. A(6,1) , B (8,2) and C (9,4) are three vertices of a parallelogram ABCD . If E is the mid - point of DC , then find the area of $\triangle$ ADE.

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55. The points A $(x_1, y_1), B(x_2, y_2)$ and $C(x_3, y_3)$ are the vertices of $\triangle$ ABC.

(i) The median from A Meets Bc at D. Find the

coordinates of the points D.

(ii) Find the coordinates of the point P on Ad such that $AP:PD=2:1$.

(iii) Find the coordinates of points Q and R on medians BE and CF, respectively such that $BQ:QE=2:1$ and $CR:RF=2:1$.

What are the coordinates of the centroid of the $\triangle$ ABC?

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56. If the points A (1,-2), B (2,3) , C (a,2) and D (-4-,3) form a parallelogram , them find the value of a and height of the parallelogram taking AB as base.

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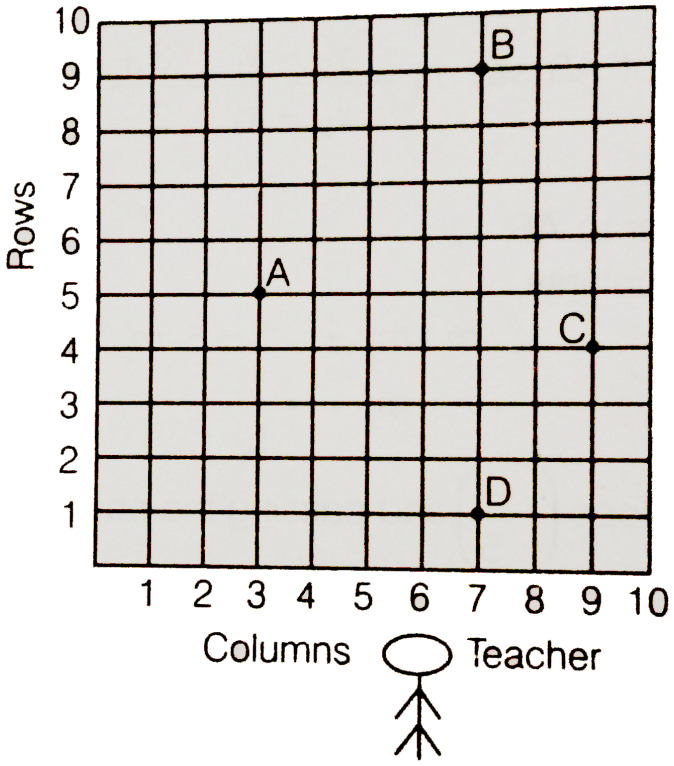
57. Students of a school are standing in rows and columns in their playground for a drill practice . A, B, C and D are the positions of four students as shown in figure . Is it possible

to place Jaspal inn the drill in such a way that he is equidistant from each of the four students A, B C and D ? If so, what should be his position ?



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58. Ayush starts walking from his house to office . Instead of going to the office directly , he goes to bank first , from there to his daughter 's school and then reaches the office. What is the extra distance travelled by Ayush in reaching his office ? (Assume that all distance covered are in straight lines). If the house is situated at (2,4) bank at (5,8), school at (13,14) and office at (13,26) and coordinates are in km.

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