MATHS

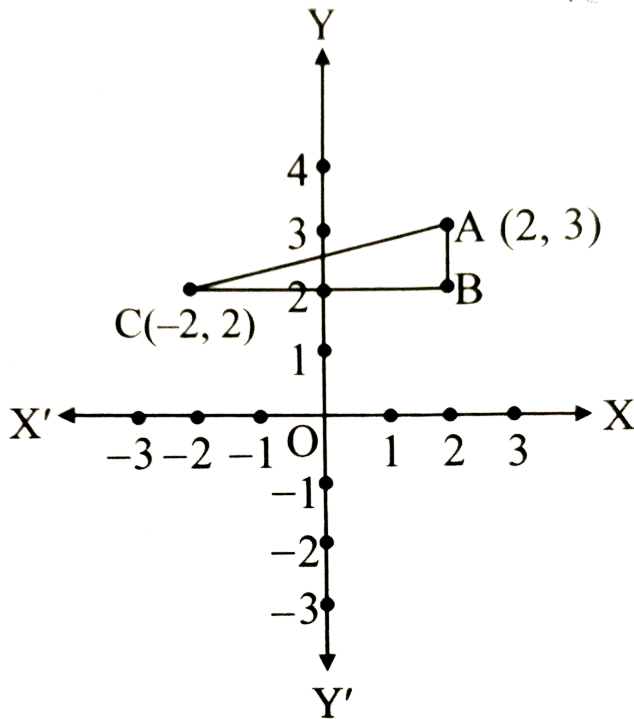## BOOKS - TARGET MATHS (HINGLISH)

CO-ORDINATE GEOMETRY

Example

1. In the figure , seg AB || Y -axis and seg CB||X-axis . Co-ordinates of points A and C are given .

To find AC, fill in the boxes given below .

2. Solve the following questions. (Any two)

(ii) A (15,5) ,B(9,20) and A-P-B . Find the ratio in

which point P(11,15) divides segment AB. Find the ratio using x and y co-ordinates . Write the conclusion .

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Practice Set 5 1

1. Find the distance between each of the following pairs of points .

(i) A (2,3),B(4,1)

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2. Find the distance between each of the following pairs of points .

P (-5,7) ,Q(-1,3)

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3. Find the distance between each of the following pairs of the points.

$$R(0, \, -3), \, S\left(0, \, \frac{5}{2}\right)$$

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4. Find the distance between each of the following pairs of the points.

$L(5, -8), M(-7, -3)$

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5. Find the distance between each of the following pairs of the points.

$T(-3, 6), R(9, -10)$

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6. Find the distance between each of the following pairs of points:

$$W\left(\frac{-7}{2}, 4\right), X(11, 4)$$

7. Determine whether the points are collinear or not:

$$A(1, -3), B(2, -5), C(-4, 7)$$

8. Determine whether the points are collinear.

$L(-2, 3), M(1, -3), N(5, 4)$

9. Determine whether the points are collinear.

$R(0, 3), D(2, 1)$ and $S(3, -1)$

10. Determine whether the points are collinear.

$$P(-2, 3), Q(1, 2), R(4, 1)$$

11. Find the point on the X-axis which is equidistant from $A(-3, 4)$ and $B(1, -4)$.

12. Verify that point P (-2,2), Q (2,2) and R (2,7) are vertices of a right angled triangle .

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13. Show that points P(2,-2) , Q (7,3) ,R(11,-1) and S(6,-6) are vertices of a parallelogram.

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14. Solve the following quations. (Any two)

(i) Show that points A(-4,-7),B(-1,2) ,C(8,5) and D(5,-4) are vertices of rhombus ABCD.

15. Find x, if distance between points $L(x, 7)$ and $M(1, 15)$ is 10.

16. Show that the points $A(1, 2), B(1, 6), C(1 + 2\sqrt{3}, 4)$ are vertices of an equilateral triangle.

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Practice Set 5 2

1. Find the co-ordinates of point P if P divides the line segment joining the points $A(-1, 7)$ and $B(4, -3)$ in the ratio $2:3$

2. In each of the following examples find the co-ordinates of point A with divides segment PQ in the ratio $a:b$.

$P(-3, 7), Q(1, -4), a:b = 2:1$

3. In each of the following examples find the co-ordinates of point A with divides segment

PQ in the ratio $a:b$.

$P(-2, -5), Q(4, 3), a:b = 3:4$

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4. In each of the following examples find the co-ordinates of point A which divides segment PQ in the ratio a:b .

P(2,6),Q(-4,1) ,a:b=3:4

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5. Find the ratio in which point $T(- 1, 6)$ divides the line segment joining the points $P(- 3, 10)$ and $Q(6, - 8)$

6. Point P is the centre of the circle and AB is a diameter. Find the c0-ordinates of point B if co-ordinates of point A and P are $(2, - 3)$ and $(- 2, 0)$ respectively.

7. Find the ratio in which point P (k,7) divides the segment joining A (8,9) and B (1,2) . Also find find k.

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8. Find the coordinates of midpoint of the segment joining the points (22,20) and (0,16).

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9. Find the centroids of the triangles whose vertices are given below:

$$(- 7, 6), (2, - 2), (8, 5)$$

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10. Find the centroids of the triangles whose vertices are given below:

$$(3, - 5), (4, 3), (11, - 4)$$

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11. Find the centroids of the triangles whose vertices are given below:

$(4, 7), (8, 4), (7, 11)$

12. In $\triangle ABC, G(-4, -7)$ is the centroid. If $A(-14, -19)$ and $B(3, 5)$ then find the coordinates of C.

13. $A(h, -6)$, $B(2, 3)$ and $C(-6, k)$ are the co-ordinates of vertices of a triangle whose centroid is $G(1, 5)$ Find h and k.

14. Find the co-ordinates of the points of trisection of the line segment AB with A (2,7) and B (-4,-8) .

15. If $A(-14, -10), B(6, -2)$ is given. Find the coordinates of the points which divide segment AB into four equal parts.

16. If A (20,10) ,B (0,20) are given , find the co-ordinates of the points which divide segment AB into five congruent parts.

1. Angles made by the line with the positive direction of X-axis are given. Find the slope of these lines.

45°

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2. Angles made by the line with the positive direction of X-axis are given. Find the slope of

these lines.

$60°$

3. Angles made by the line with the positive direction of X-axis are given . Find the slope of these lines .

(iii) $90°$

4. Find the slope of the lines passing through the given points

$A(2, 3), B(4, 7)$

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5. Write the slope of line passing through P(-3,1) and Q(5-2).

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6. Find the slopes of the lines passing through the given points:

$C(5, \ -2), D(7, 3)$

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7. Find the slopes of the lines passing through the given points:

$L(-2, \ -3), M(-6, \ -8)$

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8. Find the slopes of the lines passing through the given points:

$E(-4, -2), F(6, 3)$

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9. Find the slopes of the lines passing through the given points:

$T(0, -3)$ and $S(0, 4)$

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10. Determine whether following points are collinear.

$$A(- 1, \ - 1), B(0, 1), C(1, 3)$$

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11. Determine whether following points are collinear.

$$D(- 2, \ - 3), E(1, 0), F(2, 1)$$

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12. Determine whether following points are collinear.

$L(2, 5), M(3, 3), N(5, 1)$

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13. Determine whether following points are collinear.

$P(2, -5), Q(1, -3), R(-2, 3)$

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14. Determine whether the following points are collinear or not:

$$R(1, -4), S(-2, 2), T(-3, 4)$$

15. Determine whether the following points are collinear or not:

$$A(-4, 4), K\left(-2, \frac{5}{2}\right), N(4, -2)$$

16. If $A(1, -1), B(0, 4), C(-5, 3)$ are vertices of a triangle, then find the slope of each side.

17. Show that A (-4,-7) , B (-1,2) ,C (8,5) and D (5,-4) are the vertices of a parallelogram.

18. Find $k,$ if $R(1, \ -1), S(-2, K)$ and slope of line RS is $-2.$

19. Find k, if $B(k, \ -5), C(1, 2),$ and slope of the line is 7.

20. Find k, if PQ $||$ RS and P(2,4), Q (3,6), R (3,1), S(5,k).

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Problem Set 5

1. Seg AB is parallel to Y-axis and coordinates of point of A are (1,3) then coordinates of point B can be

A. (3,1)

B. (5,3)

C. (3,0)

D. (1,-3)

Answer: D

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2. Out of the following point ....lies to the right of the origin on X-axis.

A. (-2,0)

B. (0,2)

C. (2,3)

D. (2,0)

Answer: D

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3. Distance of point (-3,4) from the origin is

....

A. 7

B. 1

C. 5

D. -5

Answer: C

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4. A line makes an angle of $30°$ with the positive direction of X-axis. So the slope of the line is ....

A. $\dfrac{1}{2}$

B. $\dfrac{\sqrt{3}}{2}$

C. $\dfrac{1}{\sqrt{3}}$

D. $\sqrt{3}$

Answer: C

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5. Determine whether the given points are collinear.

$A(0, 2), B(1, \ -0.5), C(2, \ -3)$

6. Determine whether the given points are collinear.

$$P(1, 2), Q\left(2, \frac{8}{5}\right), R\left(3, \frac{6}{5}\right)$$

7. Determine whether the given points are collinear.

$$L(1, 2), M(5, 3), N(8, 6)$$

8. Find the coordinates of the midpoint of the line segment joining $P(0, 6)$ and $Q(12, 20)$

9. Find the ratio in which the line segment joining the points $A(3, 8)$ and $B(-9, 3)$ is divided by the `Y-axis.

10. Find the point on X axis which is equidistant from $P(2, -5)$ and $Q(-2, 9)$

11. Find the distance between the following pairs of poins.

$A(a, 0), B(0, a)$

12. Find the distance between the following pairs of poins.

$$P(- 6, - 3), Q(- 1, 9)$$

A. Find the distances between the following points.

R(-3a,a) , S (a,-2a) .

B.

C.

D.

Answer: $\therefore$ d(P,Q)=13 units

13. Find the distance between the following pairs of poins.

$$R(-3a, a), S(a, -2a)$$

14. Find the co-ordinates of the circumcentre of a triangle whose vertices are (-3,1) ,(0,-2) and

(1,3) .

15. In the following examples, can the segment joining the given points form a triangle? If triangle is formed, state the type of the triagle considering sides of the triangle.

$L(6, 4), M(- 5, - 3), N(- 6, 8)$

16. In the following examples , can the segment joining the given points from a triangle ? If triangle is formed , state the type of the triangle considering sides of the triangle.

(ii) P(-2,-6) , Q (-4,-2) ,R(-5,0)

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17. In the following examples , can the segment joining the given points from a triangle ? If

triangle is formed , state the type of the triangle considering sides of the triangle.

(iii)   A

$$\left(\sqrt{2}, \sqrt{2}\right), B\left(-\sqrt{2}, -\sqrt{2}\right), C\left(-\sqrt{6}, \sqrt{6}\right)$$

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18. Find k if the line passing through points $P(-12, -3)$ and $Q(4, k)$ has slope $\dfrac{1}{2}$.

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19. Show that the line joining the points A(4,8) and B(5,5) is parallel to the line joining the points C(2,4) and D(1,7).

20. Show that points $P(1, -2), Q(5, 2), R(3, -1), S(-1, -5)$ are the vertices of a parallelogram.

21. Show that the points P(2,1), Q(-1,3) , R (-5,-3) and

S (-2,-5) are the vertices of a square .

22. Find the lengths of the medians of a triangle whose vertices are $A(- 1, 1), B(5, - 3)$ and $C(3, 5)$.

23. Find the co-ordinates of centroid of the triangles if points $D(-7, 6), E(8, 5)$ and $F(2, -2)$ are the mid points of the sides of that triangle.

24. Show that points A (4,-1)B (6,0) C (7,-2) and D (5,-3) are the veties of a square.

25. Find the co-ordinates of circumcentre and radius of circumcircle of $\triangle$ ABC if A(7,1) ,B(3,5) and C(2,0) are given .

26. Given $A(4, -3), B(8, 5)$. Find the co-ordinates of the point that divides segment AB in the ratio $3 : 1$.

27. Find the type of the quadrilateral, if point

$A(- 4, \ - 2), B(- 3, \ - 7), C(3, \ - 2)$ and

$D(2, 3)$ are joined serially.

28. The line segment AB is divided into five

congruent parts at P ,Q ,R and S such that A-P-

Q-R-S-B . If point Q (12,14) and S(4,18) are given ,

find the co-ordinates of A,P,R,B.

29. Find the co-ordinates of the centre of the circle passing through the point, $P(6, \; -6), Q(3, \; -7)$ and $R(3, 3)$

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30. Find the possible pairs of co-ordinates of the fourth vertex D of the parallelogram if three of its verices are A (5,6) , B (1,-2) and C (3,-2) .

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31. Find the slope of the diagonals of a quadrilateral with vertices $A(1, 7), B(6, 3)C(0, -3)$ and $D(-3, 3)$.

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Activities For Practice

1. Find the point on the X-axis which is equidistant from $A(-3, 4)$ and $B(1, -4)$.

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2. Coplete the following activities. (any one)

(i) If the passing through points P (-12,-3) and Q(4,k) has slope $\dfrac{1}{2}$, complete the activity to find the value of k.
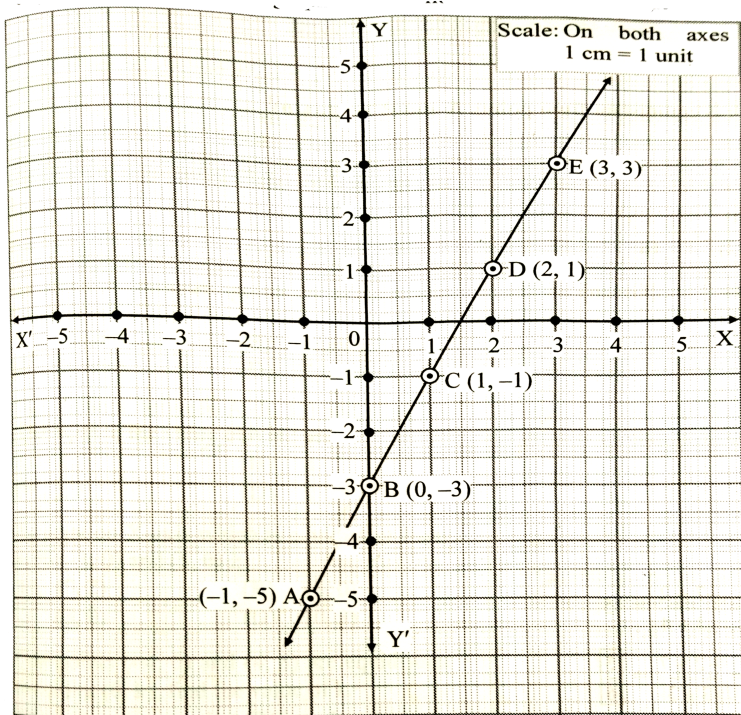
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3. To show that A(-4,-2) ,B (-3,-7) ,C(3,-2) and D (2,3) are the vertices of a parallelogram

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4. Complete the table below the graph with the help of the following graph.

Sr. No.	First point	Second point	Co-ordinates of first point (x_1, y_1)	Co-ordinates of second point (x_2, y_2)	$\dfrac{y_2 - y_1}{x_2 - x_1}$
1	C	E	(1, –1)	(3, 3)	☐
2	A	B	(–1,–5)	(0,–3)	☐
3	B	D	(0,–3)	(2, 1)	☐

Multiple Choice Questions

1. The distance of the point (4,3) from the X - axis is

A. 2

B. 3

C. 4

D. 5

Answer: B

2. The distance of the points (8,6) from the origin is

A. 8

B. 4

C. 10

D. 6

Answer: C

3. The distance between points A (6,0) and B(0,8) is

    A. 14 units

    B. 2 units

    C. 10 units

    D. 7 units

Answer: C

4. If the distance between A (h,12) and origin is 13 units , then the value of h is are

A. ± 5

B. 4

C. ± 3

D. 2

Answer: A::C

5. The point on x-axis which is equidistant from points A (-1, 0) and B(5, 0) is

A. (0,2)

B. (2,0)

C. (3,0)

D. (0,3)

Answer: B

6. If the points (-4,0) and (4,8) are equidistant from point (0,k) , find the value of k .

A. ± 4

B. -4

C. 4

D. 0

Answer: C

7. If the point (x,y) is equidistant from (7,1) and

(3,5) , then

    A. x+y=2

    B. x-y=2

    C. y=x+2

    D. x+y=-2

Answer: B

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

A. 5

B. 12

C. 9

D. 16

Answer: B

9. ABCD is a rectangle whose three vertices are A (0,4) B (0,0) and C (3,0) . The length of its diagonal is

A. 5

B. 3

C. 6

D. 4

Answer: A

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

    A. a right angled triangle

    B. an isosceles triangle

    C. an equilateral triangle

    D. an equilateral triangles

Answer: B

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11. Which of the points A (1,2), B (-2,2) , C (-3,-4) and D (4,-1) is nearest to the origin ?

A. A

B. B

C. C

D. D

Answer: A

12. The co-ordinates of point which divides the segment joining A (0,4) and B (6,0) in the ratio 1 :2 are

A. $\left(\dfrac{3}{8}, \dfrac{1}{2}\right)$

B. $\left(\dfrac{1}{2}, \dfrac{3}{8}\right)$

C. $\left(2, \dfrac{8}{3}\right)$

D. $\left(\dfrac{8}{3}, 2\right)$

Answer: C

13. In what ratio does the point P(2, -5) divide the line segment joining A(-3, 5) and B(4, -9)?

A. $1:3$

B. $3:1$

C. $1:4$

D. $3:4$

Answer: A

14. If point P (1,1) divides line segment joining the points A and B (-1,-1) in the ratio $5:2$, then co-ordinates of A are

A. (3,3)

B. (6,6)

C. (2,2)

D. (1,1)

Answer: B

15. The point which divides the line segment joining the points (5,4) and (-13,1) in the ratio $2 : 1$ lies in the

    A. I quadrant

    B. II quadrant

    C. III quadrant

    D. IV quadrant

Answer: B

16. The ratio in which X -axis divides the segment joining (-4,3) and (2,-6) is

A. $1:2$

B. $2:1$

C. $1:3$

D. $3:1$

Answer: A

17. The line segment joining the points (-1,-2) and (2,8) is divided by Y -axis in the ratio

A. $2:1$

B. $1:2$

C. $2:3$

D. $3:2$

Answer: B

18. The co-ordinates of the midpoint of segment joining A (3,4) and B (5,-2) are ....

A. (1,4)

B. (4,3)

C. (1,3)

D. (4,1)

Answer: D

19. If the line joining A (3,3) and a point B has midpoint at origin , then co-ordinates of B are

A. (3,-3)

B. (-3,-3)

C. (-3,3)

D. (0,0)

Answer: B

20. If (5,6) is the midpoint of the line segment

joining (6,5) and (4,k), then the value of K is

A. 5

B. 6

C. 7

D. 8

Answer: C
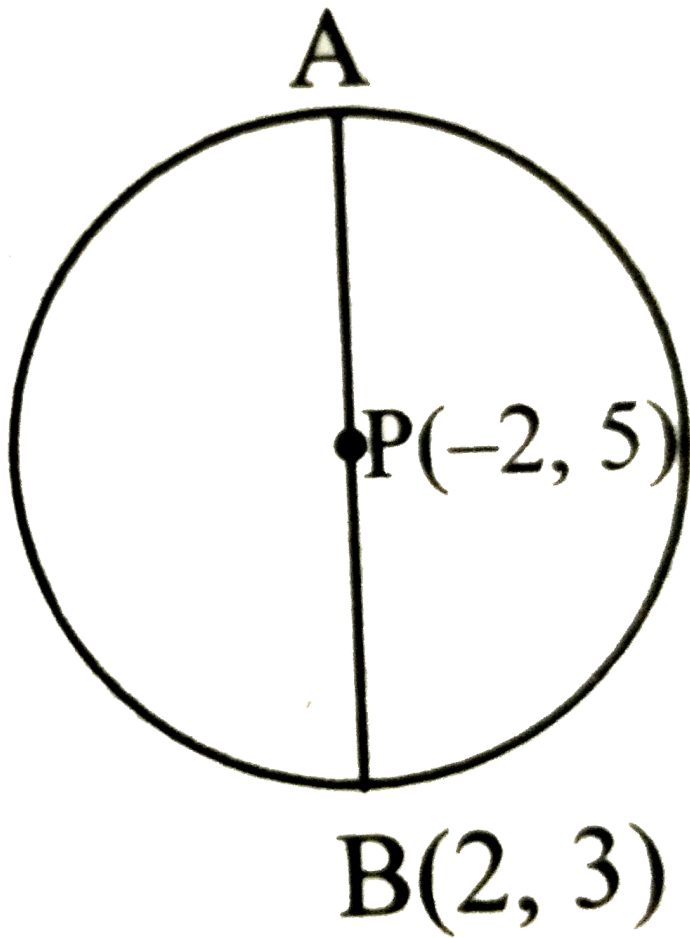
21. In the figure , point P is the centre of the circle and AB is the diameter . The co-ordinates

of A are

A

P(−2, 5)

B(2, 3)

A. (6,7)

B. (-6,7)

C. (6,3)

D. (-6,3)

Answer: B

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22. In the figure , if P (5,-3) and Q(3,y) are the points of trisection of the line segment joining the points A (-2,-5) and B (2,-5) . then y equals?

A. 2

B. 4

C. -4

D. -6

Answer: C

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23. 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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24. If $A(4,\ 9),\ \ B(2,\ 3)$ and $C(6,\ 5)$ are the

vertices of ABC , then the length of median

through C is (a) 5 units (b) $\sqrt{10}$ units (c) 25 units (d) 10 units

A. $\sqrt{5}$

B. $\sqrt{10}$

C. 25

D. 10

Answer: B

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25. In $\triangle$ PQR , G (6,-2) is the centroid . If P (3,-5) and Q(11,-4) , then co-ordinates of R are

    A. (3,4)

    B. (4,3)

    C. (-3,4)

    D. (4,-3)

Answer: B

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26. In A (h,-5) , B (-1,-6) and C (4,k) are the co-ordinates of vertices of △ ABC whose centroid is G (2,-4) , then the value of k is

A.

B.

C.

D.

Answer:

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27. The slope of the parallel to Y-axis

A. is 0

B. is 1

C. is -1

D. cannot be determined

Answer: D

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28. Write is the slope of the line which makes an angle of $60°$ with positive direction of X-axis .

A. $\dfrac{1}{2}$

B. $\sqrt{3}$

C. $\dfrac{1}{\sqrt{3}}$

D. $\dfrac{1}{\sqrt{2}}$

Answer: B

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29. If the slope of a line is $\sqrt{3}$, the angle made by the line with the positive direction of X-axis is _ _ _ _ _ _

    A. $30°$

    B. $45°$

    C. $60°$

    D. $90°$

Answer: C

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30. The slope of the line passing through the points (5,-2) and (-3,-6) is ......

A. 2

B. -2

C. $\dfrac{1}{2}$

D. $-\dfrac{1}{2}$

Answer: C

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31. If the slope of the line joining the points

(k,-3) and (-6,-8) is $\dfrac{5}{4}$,then the value of k is

A. 2

B. -2

C. 3

D. -3

Answer: B

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32. The line joining the points (1,-5) and (4,-3) is parallel to the line joining the points .

    A. (2,0) and (0,-3)

    B. (-2,0) and (0,-3)

    C. (-3,0) and (0,-2)

    D. (-3,0) and (0,2)

Answer: D

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33. Which of the following points are collinear ?

A. (-2,3),(3,-1) and (-7,5)

B. (-1,1) ,(5,7) and (8,10)

C. (-3,-1),(1,-2) and (6,2)

D. (0,1) ,(3,0) and(-1,-3)

Answer: B

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34. If the points $(k, \ 2k)$, $(3k, \ 3k)$ and $(3, \ 1)$ are collinear, then k $\dfrac{1}{3}$ (b) $-\dfrac{1}{3}$ (c) $\dfrac{2}{3}$ (d) $-\dfrac{2}{3}$

A. $-\dfrac{1}{2}$

B. $\dfrac{1}{2}$

C. $\dfrac{-1}{7}$

D. $\dfrac{1}{7}$

Answer: B

1. Find the distance between the following points .

(i) A(0,0) ,B (-5,12)

(ii) M (-4,-3) , N (2,-1)

(iii) P (3,-4) ,Q(-3,4)

(iv) L(4,1) , M (1,-3)

(v) P(-1,1) ,Q(5,-7)

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2. Using distance formula, show that the points $(1, 5)$, $(2, 4)$ and $(3, 3)$ are collinear.

3. Show that point $P(-3, 2) Q(1, -2)$ and $R(9, -10)$ are collinear

4. Find the coordinates of centre of the circle

passing through the

points P(6,-6),Q (3,-7) and R(3,3)

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5. Find the value of y if the distance between

the points A (2,-2) and B(-1,y) is 5.

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6. Show that point (5,3) is equidistant from the points (1,1) and (3,-1)

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7. Find the co-ordinates of a point on Y-axis which is equidistant from M(-5,-2) and N (3,4)

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8. If point (x, y) is equidistant from points $(7, 1)$ and $(3, 5)$ show that $y = x - 2$

9. Find the realation between x and y , such that the point(x,y) is equidistant from points (-1,8) and (3,4)

10. Show that the points A(1,2),B(4,3),C(1,0) and D(-2,-1) are the vertices of a parallelogram.

11. If $P(-2, 4)$, $Q(4, 8)$, $R(10, 5)$ and $S(4, 1)$ are the vertices of a quadrilateral, show that it is a parallelogram.

12. Show that points (1,7),(4,2),(-1,-1) and (-4,4) are vertices of a suare.

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13. Show that points A (4,-1)B (6,0) C (7,-2) and D (5,-3) are the veties of a square.

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14. Show that the points P(0,2) Q(3,-1) R(-2,-6) and S(-5,-3) are the verties of a rectangle.

15. A(-3,-4), B(-5,0),C(3,0) are the veties of $\triangle ABC$. Fin the co-ordinates of the circumcentre of $\triangle ABC$.

16. If A (2,7) ,B (-6,1) and C (-5,8) are the vertices of a triangle, then find the co-ordinates of circumcentre of that triangle .

17. In $\triangle$ PQR , if P (5,-1) ,Q(-3,3) ,R (-2,6) are the verties , then find the co-ordinates of the circumcentre and the radius of the circumcircle.

18. Find the centre and radius of the circle passing through the points P (-7,4) ,Q(0,3) and R (-4,5)

19. If A (3,5) , B (7,9) and Q divides seg AB in the ratio $2:3$, then find the co-ordinates of points Q .

20. If C(-2,-6) ,D (2,10) and Q divides seg CD in the ratio $4:3$. Find the co-ordinates of points Q.

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21. If point T divides the segment AB with A (-7,4) and B (-6,-5) in the ratio $7:2$, find the co-ordinates of T

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22. If point P(-4,6) divides the line segment AB with A(-6,10) in the ratio 2:1 , then coordinates of the point B are

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23. The line segment LM is divided by point B (-7,2) in the ratio 2:1 if l (5,4) , then find the co-ordinates of M

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24. A (12,5) ,B (4,-3) and A-P-B . Find the ratio in which point P (9,2) divides segment AB.

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25. Find the coordinates of the points of trisection of the line segment joining the points (2,-2) and (-7,-4)

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26. If P is the midpoint of line segment AB with $A(-4, 2)$ and $B(6, 2)$ then coordinates of point P are.

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27. If $A(-14, -10), B(6, -2)$ is given. Find the coordinates of the points which divide segment AB into four equal parts.

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28. In $\triangle ABC$, the co-ordinates of vertices A,B and C are (4,7) ,(-2,3) and (2,1) respectively . Find the lengths of its medinas.

29. The centroid of $\triangle$ PQR is G (2,-4), and P(3,-5) and Q(-1,-6) are its vertices. Then find the co-ordinates of R.

30. Find the slope of the following lines.

(i) Line parallel to X-axis .

(ii) Line passing through the points A(-2,-3) and B(2,4)

(iii) Line passing through the points P (3,2) and Q(4,1) .

(iv) Line passing through the points A(-3,5) and B (4,-1).

(v) Line passing through points C(3,5) and D(-2,-3) .

(vi) Line passing through the points A (6,-2) and B (-3,4) .

31. If slope of the line joining points P(k,0) and

Q(-3,-2) is $\dfrac{2}{7}$, then find k.

32. Using slope concept, check whether the

following points are collinear or not.

(i) A(7,8), B(-5,2) and (3,6)

(ii) X(-1,3) ,Y(8,-3) and Z(2,1)

(iii) A(-2,-2) ,B (1,1) and D (3,3)

33. Show that points P (-2,3) ,Q(1,2) ,R(4,1) are collinear.

34. Show that points P (3,1) ,Q(-1,9) ,and R(4,-1) are collinear.

35. Find the value of k, if the points A(-1,1)

B(5,7) and C(8,k) are collinear

36. Find the value of k, so that line joining the

points A (3,k) and B(2,7) is parallel to line

joining the points C(-1,4) and D(0,6).

37. Show that □ ABCD is a parallelogram if A (4,8) ,B(5,5), C(2,4) ,D(1,7) .

38. If A(6,1) ,B(8,2) ,C(9,4) and D (7,3) are the vertices of □ ABCD , show that □ ABCD is a parallelogram.

Chapter Assessment

1. Choose the correct alternative.

(i) The distance of Q (3,-1) from the origin is

    A. 2 units

    B. 4 units

    C. $\sqrt{5}$ units

    D. $\sqrt{10}$ units

Answer: D

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2. Choose the correct alternative.

(ii) The midpoint of the segment joining the points A (-5,6) and B (-6,5) is ......

A. $\left(\dfrac{1}{2}, \dfrac{11}{2} \right)$

B. $\left(\dfrac{-1}{2}, \dfrac{11}{2} \right)$

C. $\left(\dfrac{11}{2}, \dfrac{-11}{2} \right)$

D. $\left(\dfrac{-11}{2}, \dfrac{11}{2} \right)$

Answer: D

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3. Choose the correct alternative.

(iii) if point P divides segment joining (-5,6) and B (3,-5) in the co-ordinates of points P are

    A. (-2,-2)

    B. (-1,-1)

    C. (-3,1)

    D. (1,-3)

Answer: C

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4. The slope of X axis is.....

A. 0

B. 1

C. $\dfrac{1}{2}$

D. $\dfrac{\sqrt{3}}{2}$

Answer: A

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5. Solve the following quations . (Any one)

(i) Find the slope of the lines making $45°$ and $90°$ with the direction of X-axis .

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6. Find the co-ordinates of a point on Y-axis which is equidistant from S (-3,-1) and T (2,-2) .

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7. Find k if the line passing through points $P(-12, -3)$ and $Q(4, k)$ has slope $\dfrac{1}{2}$.

8. Find the slope of line l which is parallel to X - axis . Also , find the slope of line n which is parallel to Y-axis .

9. Solve the following questions. (Any two)

(i) Check if the points (3,9) , (0,6) and (-4,2) are collinear or not .

10. Solve the following questions. (Any two)

(ii) Find the ratio in which point Q (-1,4) divides the line segment joining R (0,6) and S(-4,-2) .

11. Solve the following questions. (Any two)

(iii) Find the co-ordinates of the centroid of Δ ABC if A(-3,2) ,B (-6,-1) and C (0,5) are its vertices.

12. Show that points $A(- 4, - 7), B(- 1, 2), C(8, 5)$ and $D(5, - 4)$ are the vertices of rhombus ABCD.

13. Solve the following questions. (Any two)

(ii) Find the co-ordinates of the points which divides the segment joining P(-6,10) and Q(-10,-2) into four equal parts .

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14. Solve the following questions. (Any two)

(iii) Find the lengths of the medians of a triangle whose vertices are (8,2) ,(-2,0) and (-4, -2) .

15. Solve the following questions. (Any two)

(iv) Find the ratio in which point P (k,7) divides the segment joining A (8,9) and B (1,2) . Also find k.

16. Prove that the points (3, 0), (6, 4) and (-1, 3) are the vertices of a right angled isosceles triangle.

17. Points A(-1, y) and B(5, 7) lie on a circle with centre O(2, -3y) . Find the values of y. Hence, find the radius of the circle.

18. Solve the following questions. (Any two)

(i) Point R divides seg PQ externally in the ratio

$3:1$ and P-Q-R. find the ratio in which point Q divides seg PR.

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19. Solve the following questions. (Any two)

(ii) A (15,5) ,B(9,20) and A-P-B . Find the ratio in which point P(11,15) divides segment AB. Find the ratio using x and y co-ordinates . Write the conclusion .

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