EduSahara™ Worksheet

Name : Chapter Based Worksheet

Chapter : Distance and Section Formulae

Grade : ICSE Grade X

1. A and B are two points on the x-axis and y-axis respectively. If $(2,(-1))$ is the mid-point of the join of A and B, find A and B

   (i) $(2,(-2)),(0,(-2))$ (ii) $(4,0),((-1),(-1))$ (iii) $(4,0),(0,(-2))$ (iv) $(6,2),(0,(-2))$ (v) $(5,(-1)),(0,(-2))$

2. In what ratio is the join of $(1,(-4))$ and $(5,5)$ divided by the line $(-y)=0$?

   (i) 3:5 (ii) 4:5 (iii) 4:8 (iv) 4:2 (v) 5:5

3. Determine the ratio in which the line $(5x-6y+24)=0$ divides the join of points $(2,(-1))$ and $((-4),4)$

   (i) 3:1 (ii) 2:-1 (iii) 1:1 (iv) 2:3 (v) 2:1

4. The points $(5,7),(8,(-8))$ and $((\frac{13}{2}+\frac{15}{2}\sqrt{3}),(-\frac{1}{2}+\frac{3}{2}\sqrt{3}))$ represent

   (i) scalene triangle (ii) equilateral triangle (iii) isosceles triangle (iv) right angled triangle

5. In what ratio is the join of $(4,(-4))$ and $((-5),4)$ divided by y-axis?

   (i) 4:5 (ii) 6:1 (iii) 8:1 (iv) 4:8 (v) 4:3

6. The points $(3,5),((-3),(-5))$ and $(0,0)$ represents

   (i) collinear points (ii) right angle triangle (iii) isoceles triangle (iv) equilateral triangle

7. Find the relation between x and y if the points $(x,y),(2,(-3))$ and $(4,(-7))$ are collinear

   (i) $(12x-6y-36)=0$ (ii) $(13x-2y-66)=0$ (iii) $(x+4y+24)=0$ (iv) $(-3x+2y+12)=0$

   (v) $(-4x-2y+2)=0$

8. If $A(2,(-3))$ and $B(4,5)$ are two points, find the coordinates of the point C on AB produced so that AC = 2BC

   (i) $(6,13)$ (ii) $(4,11)$ (iii) $(8,15)$ (iv) $(5,14)$ (v) $(7,12)$

9. Find the points on y-axis, which are at a distance of 11 units from the point $((-2),(-8))$

   (i) $(1,(-9+3\sqrt{13})),(0,(-8-3\sqrt{13}))$ (ii) $(2,(-6+3\sqrt{13})),(0,(-8-3\sqrt{13}))$

   (iii) $((-2),(-10+3\sqrt{13})),(0,(-8-3\sqrt{13}))$ (iv) $(0,(-8+3\sqrt{13})),((-1),(-7-3\sqrt{13}))$

   (v) $(0,(-8+3\sqrt{13})),(0,(-8-3\sqrt{13}))$

10. Find the relation between x and y such that the point $P(x,y)$ is equidistant from points $(7,(-1))$ and $(8,(-2))$

    (i) $(-x+3y+9)=0$ (ii) $(-2x+y+9)=0$ (iii) $(-x+14y+21)=0$ (iv) $(-x+11y+21)=0$

    (v) $(-x+y+9)=0$

11. The centre of a circle is $(5,\frac{5}{2})$. Find the other end of the diameter whose one end point is $(6,4)$

(i) $(4,(-1))$ (ii) $(1,4)$ (iii) $(4,1)$ (iv) $((-4),(-1))$ (v) $((-4),1)$

12. Three vertices of a parallelogram are $((-2),(-6)),(6,(-6))$ and $(9,(-3))$. Find the fourth vertex

(i) $(2,(-4))$ (ii) $(1,(-3))$ (iii) $((-1),(-5))$ (iv) $(0,(-2))$ (v) $(3,(-1))$

13. Find the area of the quadrilateral formed by $((-1),(-4)),(2,0),((-3),1)$ and $((-3),0)$

(i) $\frac{23}{2}$ (ii) $\frac{27}{2}$ (iii) $\frac{25}{4}$ (iv) 25 (v) $\frac{25}{2}$

14. Find the lengths of the medians of a triangle whose vertices are $(6,(-4)),(7,(-5))$ and $((-3),(-4))$

(i) $\frac{1}{2}\sqrt{2},\frac{1}{2}\sqrt{101},\frac{1}{2}\sqrt{101}$ (ii) $\frac{1}{2}\sqrt{101},\frac{9}{2},\frac{1}{2}\sqrt{2}$ (iii) $\frac{1}{2}\sqrt{65},\frac{5}{2}\sqrt{5},\frac{1}{2}\sqrt{362}$

15. Find the centroid of the triangle formed by the points $(1,(-4)),(7,(-6))$ and $((-3),4)$

(i) $(\frac{2}{3},(-1))$ (ii) $(\frac{5}{3},(-2))$ (iii) $((-\frac{1}{3}),(-4))$ (iv) $(\frac{8}{3},(-3))$ (v) $(\frac{11}{3},0)$

16. Distance of the point (8,6) from y-axis is

(i) 14 (ii) 6 (iii) 2 (iv) (-2) (v) 8

17. Find the point on y-axis which is equidistant from the points $((-1),8)$ and $((-3),1)$

(i) $(0,\frac{55}{14})$ (ii) $((-2),\frac{27}{14})$ (iii) $(2,\frac{83}{14})$ (iv) $(1,\frac{41}{14})$ (v) $((-1),\frac{69}{14})$

18. The points $((-2),(-1)),(5,(-1)),(5,2)$ and $((-2),2)$ represents

(i) rectangle (ii) trapezium (iii) square (iv) rhombus (v) parallelogram

19. Find the coordinates of the circumcentre of the triangle whose vertices are $((-8),3),(6,6)$ and $(7,(-4))$

(i) $(\frac{541}{286},\frac{669}{286})$ (ii) $((-\frac{31}{286}),\frac{97}{286})$ (iii) $((-\frac{317}{286}),\frac{383}{286})$ (iv) $(\frac{255}{286},(-\frac{189}{286}))$ (v) $((-\frac{603}{286}),(-\frac{475}{286}))$

20. Find the coordinates of the orthocentre of the triangle whose vertices are $(0,(-5)),(0,(-8))$ and $(7,(-2))$

(i) $((-\frac{11}{7}),(-3))$ (ii) $((-\frac{32}{7}),(-4))$ (iii) $((-\frac{18}{7}),(-2))$ (iv) $((-\frac{25}{7}),(-1))$ (v) $((-\frac{4}{7}),0)$

21. Find the coordinates of the midpoints of the sides of the quadrilateral formed by $((-5),(-6)),((-2),(-3)),((-4),(-2))$ and $((-6),(-4))$

(i) $((-\frac{3}{2}),(-\frac{5}{2})),((-3),(-\frac{5}{2})),((-5),(-3)),((-\frac{11}{2}),(-5))$

(ii) $((-\frac{7}{2}),(-\frac{9}{2})),((-3),(-\frac{5}{2})),((-5),(-3)),((-\frac{13}{2}),(-4))$

(iii) $((-\frac{7}{2}),(-\frac{9}{2})),((-3),(-\frac{5}{2})),((-4),(-4)),((-\frac{11}{2}),(-5))$

(iv) $((-\frac{7}{2}),(-\frac{9}{2})),((-3),(-\frac{5}{2})),((-5),(-3)),((-\frac{11}{2}),(-5))$

(v) $((-\frac{7}{2}),(-\frac{9}{2})),((-3),(-\frac{5}{2})),((-7),(-5)),((-\frac{11}{2}),(-5))$

22. Find the point that divides the join of points $(8,(-8))$ and $((-7),1)$ internally in the ratio $2:7$

(i) $(\frac{8}{3},(-8))$ (ii) $(\frac{17}{3},(-7))$ (iii) $(\frac{11}{3},(-5))$ (iv) $(\frac{20}{3},(-4))$ (v) $(\frac{14}{3},(-6))$

23. If point $P(x,5)$ is equidistant from the points $((-3),(-5))$ and $((-5),0)$, find x

(i) $\frac{61}{4}$ (ii) $\frac{59}{4}$ (iii) $\frac{31}{2}$ (iv) $\frac{29}{2}$ (v) $\frac{57}{4}$

24. Find the ratio in which point $((-5),(-\frac{7}{2}))$ divides the join of points $((-8),(-7))$ and $((-2),0)$

(i) $3:2$ (ii) $1:2$ (iii) $2:5$ (iv) $2:0$ (v) $2:2$

25. The centroid of the triangle formed by the points $(x_1,y_1),(x_2,y_2)$ and (x_3,y_3) is

(i) $(\frac{x_1-x_2-x_3}{3},\frac{y_1-y_2-y_3}{3})$ (ii) $(\frac{y_1+y_2+y_3}{2},\frac{x_1+x_2+x_3}{2})$ (iii) $(\frac{y_1-y_2-y_3}{2},\frac{x_1-x_2-x_3}{2})$

(iv) $(\frac{x_1+x_2+x_3}{3},\frac{y_1+y_2+y_3}{3})$ (v) $(\frac{x_1-x_2-x_3}{2},\frac{y_1-y_2-y_3}{2})$

Assignment Key

1) (iii)	2) (ii)	3) (v)	4) (ii)	5) (i)	6) (i)
7) (v)	8) (i)	9) (v)	10) (v)	11) (iii)	12) (ii)
13) (v)	14) (iii)	15) (ii)	16) (v)	17) (i)	18) (i)
19) (ii)	20) (iii)	21) (iv)	22) (v)	23) (ii)	24) (v)
25) (iv)					