

EduSahara™ Learning Center Assignment**Grade : Class X, ICSE****Chapter : Distance and Section Formulae****Name : Section Formula**Find the point that divides the join of points $((-5), 5)$ and

1.

 $((-6), 5)$ internally in the ratio $1 : 7$ (i) $((-\frac{57}{8}), 3)$ (ii) $((-\frac{41}{8}), 5)$ (iii) $((-\frac{33}{8}), 4)$ (iv) $((-\frac{49}{8}), 6)$ (v) $((-\frac{25}{8}), 7)$

Find the coordinates of the mid points of the sides of the triangle formed by

2.

 $(3, (-3)), (6, (-1))$ and $((-3), (-6))$ (i) $(\frac{9}{2}, (-2)), (\frac{3}{2}, (-\frac{7}{2})), (1, (-\frac{11}{2}))$ (ii) $(\frac{9}{2}, (-2)), (\frac{3}{2}, (-\frac{7}{2})), ((-2), (-\frac{13}{2}))$ (iii) $(\frac{9}{2}, (-2)), (\frac{3}{2}, (-\frac{7}{2})), (0, (-\frac{9}{2}))$ (iv) $(\frac{9}{2}, (-2)), (\frac{7}{2}, (-\frac{3}{2})), (0, (-\frac{9}{2}))$ (v) $(\frac{7}{2}, (-1)), (\frac{3}{2}, (-\frac{7}{2})), (0, (-\frac{9}{2}))$

Find the coordinates of the vertices of the triangle,

3.

the mid points of whose sides are $((-1), \frac{9}{2}), (6, 1)$ and $((-1), \frac{3}{2})$ (i) $((-8), 5), (6, 4), (6, (-2))$ (ii) $((-8), 5), (6, 4), (7, (-3))$ (iii) $((-8), 5), (6, 4), (4, (-4))$ (iv) $((-9), 6), (6, 4), (6, (-2))$ (v) $((-8), 5), (8, 6), (6, (-2))$

The coordinates of the point dividing the join of points

4.

 (x_1, y_1) and (x_2, y_2) internally in the ratio $m:n$ are(i) $(\frac{mx_2 - nx_1}{m - n}, \frac{my_2 - ny_1}{m - n})$ (ii) $(\frac{mx_2 + nx_1}{m + n}, \frac{my_2 + ny_1}{m + n})$ (iii) $(\frac{nx_2 - mx_1}{n - m}, \frac{ny_2 - my_1}{n - m})$ (iv) $(\frac{nx_2 + mx_1}{n + m}, \frac{ny_2 + my_1}{n + m})$

$m - n$

$m - n$

$m + n$

$m + n$

5. If the point $(\frac{44}{9}, \frac{4}{3})$ divides the join of points $(8, 0)$ and (x, y) in the ratio $2 : 7$, find (x, y)

(i) $((-8), 4)$ (ii) $((-7), 7)$ (iii) $((-6), 6)$ (iv) $((-4), 8)$ (v) $((-5), 5)$

6. Find the ratio in which point $(\frac{2}{3}, \frac{16}{9})$ divides the join of points $(6, 4)$ and $((-6), (-1))$

(i) $5 : 5$ (ii) $4 : 7$ (iii) $4 : 5$ (iv) $3 : 5$ (v) $4 : 2$

7. One end of the diameter of a circle is $(1, 1)$. If the centre is $(2, (-\frac{5}{2}))$, find the other end of the diameter

(i) $(3, (-6))$ (ii) $(2, (-5))$ (iii) $(4, (-7))$ (iv) $(5, (-4))$ (v) $(1, (-8))$

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

(i) $(\frac{4}{3}, 8), (\frac{2}{3}, 5)$ (ii) $(\frac{1}{3}, 5), (\frac{2}{3}, 5)$
 (iii) $((-\frac{2}{3}), 6), ((-\frac{1}{3}), 6)$ (iv) $((-\frac{2}{3}), 6), (\frac{2}{3}, 5)$
 (v) $((-\frac{8}{3}), 4), (\frac{2}{3}, 5)$

9. In what ratio is the join of $(1, 7)$ and $(4, (-3))$ divided by x-axis?

(i) $6 : 3$ (ii) $3 : -1$ (iii) $8 : 3$ (iv) $3 : 4$ (v) $7 : 3$

10. In what ratio is the join of $(5, (-1))$ and $((-3), (-6))$ divided by y-axis?

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

11. Two vertices of a triangle are $((-4), (-3))$, $(4, 0)$ and its centroid is $((-\frac{4}{3}), (-\frac{4}{3}))$. Find the coordinates of the third vertex of the triangle

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

12. The centre of a circle is $(\frac{7}{2}, \frac{1}{2})$.

Find the other end of the diameter whose one end point is $(1, 6)$

- (i) $((-6), (-5))$ (ii) $((-6), 5)$ (iii) $(6, (-5))$ (iv) $((-5), 6)$ (v) $(6, 5)$
-

13. The points B $(2, 8)$ and D $((-6), 8)$ are the opposite vertices of a square ABCD. Find the other two vertices

- (i) $((-4), 2), ((-2), 12)$ (ii) $(0, 6), ((-2), 12)$
 (iii) $((-2), 4), ((-2), 12)$ (iv) $((-2), 4), ((-3), 13)$
 (v) $((-1), 3), ((-2), 12)$
-

14. Find the coordinates of the midpoints of the sides of the quadrilateral formed by $((-1), 1), (3, 5), ((-2), 7)$ and $((-3), 4)$

- (i) $(1, 3), (\frac{1}{2}, 6), ((-\frac{9}{2}), \frac{7}{2}), ((-2), \frac{5}{2})$
 (ii) $(1, 3), (\frac{1}{2}, 6), ((-\frac{3}{2}), \frac{9}{2}), ((-2), \frac{5}{2})$
 (iii) $(1, 3), (\frac{1}{2}, 6), ((-\frac{5}{2}), \frac{11}{2}), ((-3), \frac{7}{2})$
 (iv) $(3, 5), (\frac{1}{2}, 6), ((-\frac{5}{2}), \frac{11}{2}), ((-2), \frac{5}{2})$
 (v) $(1, 3), (\frac{1}{2}, 6), ((-\frac{5}{2}), \frac{11}{2}), ((-2), \frac{5}{2})$
-

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

- (i) $\sqrt{41}, \frac{1}{2}\sqrt{194}, \frac{1}{2}\sqrt{698}$
 (ii) $3\sqrt{5}, \frac{1}{2}\sqrt{170}, \frac{1}{2}\sqrt{2}$
 (iii) $\frac{1}{2}\sqrt{2}, 3\sqrt{5}, 3\sqrt{5}$
-

16. In what ratio is the join of $(3, (-7))$ and $((-1), 2)$ divided by the line $(-y) = 0$?

- (i) $7:4$ (ii) $8:2$ (iii) $7:2$ (iv) $7:0$ (v) $6:2$
-

17. In what ratio is the join of $((-9), 4)$ and $(6, 2)$ divided by the line $(x + 3) = 0$?

- (i) $7 : 9$ (ii) $6 : 12$ (iii) $5 : 9$ (iv) $6 : 7$ (v) $6 : 9$

18. Three vertices of a parallelogram are $((-2), (-3))$, $(5, (-3))$ and $(9, 0)$.
Find the fourth vertex

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

19. Find the centre of the circle, the endpoints of whose
diameter are $(4, (-6))$ and $((-8), 2)$

- (i) $((-2), 2)$ (ii) $((-2), (-2))$ (iii) $(2, 2)$ (iv) $(2, (-2))$

20. Determine the ratio in which the line $(-5x - 7y + 23) = 0$
divides the join of points $(2, (-4))$ and $(4, 4)$

- (i) $41 : 22$ (ii) $41 : 25$ (iii) $40 : 25$ (iv) $41 : 27$ (v) $42 : 25$

- A and B are two points on the x-axis and y-axis respectively.
21. If $((-7), 8)$ is the mid-point of the join of A and B, find A and B

- (i) $((-14), 0), (0, 16)$ (ii) $((-14), 0), ((-1), 17)$
(iii) $((-16), (-2)), (0, 16)$ (iv) $((-12), 2), (0, 16)$
(v) $((-13), (-1)), (0, 16)$

22. If A $((-6), (-4))$ and B $((-7), 5)$ are two points,
find the coordinates of the point C on AB produced so that $AC = 2BC$

- (i) $((-10), 12)$ (ii) $((-8), 14)$ (iii) $((-9), 15)$ (iv) $((-7), 13)$ (v) $((-6), 16)$

23. The mid-point of the join of points $(0, (-6))$ and $((-2), 1)$ is

- (i) $((-1), (-\frac{5}{2}))$ (ii) $(1, (-\frac{1}{2}))$ (iii) $(0, (-\frac{7}{2}))$ (iv) $((-2), (-\frac{3}{2}))$ (v) $((-3), (-\frac{9}{2}))$

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

- (i) $((-\frac{8}{3}), (-\frac{17}{3}))$ (ii) $(\frac{1}{3}, (-\frac{14}{3}))$ (iii) $((-\frac{5}{3}), (-\frac{8}{3}))$ (iv) $(\frac{4}{3}, (-\frac{5}{3}))$ (v) $((-\frac{2}{3}), (-\frac{11}{3}))$

25. The coordinates of the origin are

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

26. The mid-point of the join of the points (x_1, y_1) and (x_2, y_2) is

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

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

(v) $(\frac{y_1 - y_2}{2}, \frac{x_1 - x_2}{2})$

The centroid of the triangle formed by the points

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

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

28. Find the point that bisects $(8, 3)$ and $(8, -4)$

(i) $(7, \frac{1}{2})$ (ii) $(9, (-\frac{3}{2}))$ (iii) $(6, (-\frac{5}{2}))$ (iv) $(10, \frac{3}{2})$ (v) $(8, (-\frac{1}{2}))$

29. If point P $(-1, -2)$ bisects A $(6, 1)$ and B (x, y) , find (x, y)

(i) $((-8), (-5))$ (ii) $((-10), (-7))$ (iii) $((-9), (-4))$ (iv) $((-6), (-3))$ (v) $((-7), (-6))$

If point P $(x, 4)$ is equidistant from the points

30. $(7, 7)$ and $((-6), (-6))$, find x

(i) -3 (ii) -4 (iii) -2 (iv) 0 (v) -6

The line $(4x + 6y - 7) = 0$

31. bisects which of the following pairs of points?

(i) $((-3), 5), ((-6), 3)$ (ii) $((-4), 6), ((-7), 4)$ (iii) $((-6), 4), ((-6), 3)$

(iv) $((-4), 6), ((-6), 3)$ (v) $((-2), 8), ((-6), 3)$

Assignment Key

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