

6. Coordinate Geometry 2020

1. The distance between the points (3, 4) and (-2, -1) is
(A) $5\sqrt{2}$ (B) $\sqrt{30}$ (C) $6\sqrt{3}$ (D) $\sqrt{10}$
2. If $P(6, \frac{k}{2})$ is the mid-point of the line segment joining the points A(8, 5) and B (4, 3), then the value of k is
(A) -8 (B) 16 (C) -6 (D) 8
3. The point which divides the line segment joining the points A(2, 3) and B (-3, 4) in the ratio 3 : 4 internally lies in which quadrant?
(A) I (B) II (C) III (D) IV
4. If points A(0, 3), B(- 2, a) and C(- 1, 4) are the vertices of a right triangle right-angled at A, then (i) find the value of 'a', (ii) find the length of the longest side, and (iii) find the area of $\triangle ABC$.
5. The distance between the points $(a \cos \theta + b \sin \theta, 0)$ and $(0, a \sin \theta - b \cos \theta)$, is
(a) $a^2 + b^2$ (b) $a^2 - b^2$ (c) $\sqrt{a^2 + b^2}$ (d) $\sqrt{a^2 - b^2}$
6. If the point P(k, 0) divides the line segment joining the points A(2, -2) and B(-7, 4) in the ratio 1 : 2, then the value of k is,
(a) 1 (b) 2 (c) -2 (d) -1
7. The value of p, for which the points A(3, 1), B(5, p) and C(7, -5) are collinear, is
(a) -2 (b) 2 (c) -1 (d) 1
8. Find the area of triangle PQR formed by the points P(-5, 7), Q(-4, -5) and R(4, 5).
9. The point P on x-axis equidistant from the points A(-1, 0) and B(5, 0) is
(a) (2, 0) (b) (0, 2) (c) (3, 0) (d) (2, 2)
10. The co-ordinates of the point which is reflection of point (-3, 5) in x-axis are
(a) (3, 5) (b) (3, -5) (c) (-3, -5) (d) (-3, 5)

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11. If the point P (6, 2) divides the line segment joining A(6, 5) and B(4, y) in the ratio 3 : 1, then the value of y is
(a) 4 (b) 3 (c) 2 (d) 1
12. If the mid-point of the line segment joining the points A(3, 4) and B(k, 6) is P (x, y) and $x + y - 10 = 0$, find the value of k.
13. The point P on x-axis equidistant from the points A(-1, 0) and B(5, 0) is
(a) (2, 0) (b) (0, 2) (c) (3, 0) (d) (2, 2)
14. If the point P (6, 2) divides the line segment joining A(6, 5) and B(4, y) in the ratio 3 : 1, then the value of y is
(a) 4 (b) 3 (c) 2 (d) 1
15. In what ratio does the point P(-4, y) divide the line segment joining the points A(-6, 10) and B(3, -8) if it lies on AB. Hence find the value of y.
16. If (a, b) is the mid-point of the line segment joining the points A(10, -6) and B(k, 4) and $a - 2b = 18$, the value of k is
(a) 30 (b) 22 (c) 4 (d) 40
17. The value of k for which the points A (0, 1), B (2, k) and C(4, -5) are collinear is
(a) 2 (b) -2 (c) 0 (d) 4
18. The distance between the points $\left(-\frac{8}{5}, 2\right)$ and $\left(\frac{2}{5}, 2\right)$ is _____.
19. Show that the points A (-1, 1), B(5, 7) and C(8, 10) are collinear.
20. Find the values of k for which the points A(k + 1, 2k), B(3k, 2k + 3) and C(5k - 1, 5k) are collinear.

21. It is being given that the points A(1, 2), B(0, 0) and C(a, b) are collinear. Which of the following relations between a and b is true?
(A) $a = 2b$ (B) $2a = b$ (C) $a + b = 0$ (D) $a - b = 0$
22. Point $P\left(\frac{a}{8}, 4\right)$ is the mid-point of the line segment joining the points A(-5, 2) and B(4, 6). The value of 'a' is
(A) -4 (B) 4 (C) -8 (D) -2
23. Find the co-ordinates of the points of trisection of the line segment joining the points (3, -1) and (6,8).
24. Find the area of a quadrilateral ABCD having vertices at A(1, 2), B(1, 0), C(4, 0) and D(4, 4).
25. The point on the x-axis which is equidistant from (-4, 0) and (10, 0) is
(a) (7, 0) (b) (5, 0) (c) (0, 0) (d) (3, 0)
26. The centre of a circle whose end points of a diameter are (-6,3) and (6, 4) is
(a) (8, -1) (b) (4, 7) (c) $\left(0, \frac{7}{2}\right)$ (d) $\left(4, \frac{7}{2}\right)$
27. The distance between the points (m, -n) and (-m, n) is
(a) $\sqrt{m^2 + n^2}$ (b) $m + n$
(c) $2\sqrt{m^2 + n^2}$ (d) $\sqrt{2m^2 + 2n^2}$
28. Find the ratio in which the y-axis divides the line segment joining the points (6, -4) and (-2, -7). Also find the point of intersection.
29. Show that the points (7, 10), (-2, 5) and (3, -4) are vertices of an isosceles right triangle.
30. AOBC is a rectangle whose three vertices are A(0, -3), O(0, 0) and B(4, 0). The length of its diagonal is _____.

31. The point which divides the line segment joining the points $(8, -9)$ and $(2, 3)$ in ratio $1 : 2$ internally lies in the
- I quadrant
 - II quadrant
 - III quadrant
 - IV quadrant
32. The distance of the point $P (-3, -4)$ from the x -axis (in units) is
- 3
 - 3
 - 4
 - 5
33. If $A(\frac{m}{3}, 5)$ is the mid-point of the line segment joining the points $Q (-6, 7)$ and $R (-2, 3)$, then the value of m is
- 12
 - 4
 - 12
 - 6
34. Two friends Seema and Aditya work in the same office at Delhi. In the Christmas vacations, both decided to go to their hometowns represented by Town A and Town B respectively in the figure given below. Town A and Town B are connected by trains from the same station C (in the given figure) in Delhi. Based on the given situation, answer the following questions:

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35. (i) Who will travel more distance, Seema or Aditya, to reach to their hometown?
(ii) Seema and Aditya planned to meet at a location D situated at a point D represented by the mid-point of the line joining the points represented by Town A and Town B. Find the coordinates of the point represented by the point D
(iii) Find the area of the triangle formed by joining the points represented by A, B and C.

