CHAPTER-7 | Coordinate Geometry

QUIZ PART-01

1. The distance between the points A(2, 4) and B(4, 3) is:
   A. 2 units
   B. $\sqrt{2}$ units
   C. $\sqrt{5}$ units
   D. 3 units (C)

Explanation : Using the distance formula,AB = $\sqrt{((x_2 - x_1)^2 + (y_2 - y_1)^2)}$= $\sqrt{((4 - 2)^2 + (3 - 4)^2)}$= $\sqrt{(4 + 1)}$ = $\sqrt{5}$

2. The distance between the points A(3, −2) and B(−1, 4) is:
   A. 5 units B. $\sqrt{41}$ units
   C. $\sqrt{37}$ units D. 6 units (B)

Explanation: Using the distance formula,AB = $\sqrt{((-1 - 3)^2 + (4 - (-2))^2)}$= $\sqrt{((-4)^2 + 6^2)}$= $\sqrt{(16 + 36)}$ = $\sqrt{41}$

3. The distance from the point P(1, 2) to the origin is:
   A. $\sqrt{5}$
   B. 2
   C. 1
   D. $\sqrt{3}$ (A)

Explanation: The distance from the origin O(0, 0) to P(1, 2) isOP = $\sqrt{((1 - 0)^2 + (2 - 0)^2)}$= $\sqrt{(1 + 4)}$ = $\sqrt{5}$

4. The midpoint formula for two points A(x_1, y_1) and B(x_2, y_2) is:
   A. $((x_1 + x_2)/2 , (y_1 + y_2)/2)$
   B. $(x_1 + x_2 , y_1 + y_2)$
   C. $(x_1 - x_2 , y_1 - y_2)$
   D. $((x_1 - x_2)/2 , (y_1 - y_2)/2)$ (A)

Explanation: The midpoint is given by$((x_1 + x_2)/2 , (y_1 + y_2)/2)$

5. The distance between A(1, 3) and the origin is:
   A. 3 units
   B. 1 unit
   C. $\sqrt{10}$ units
   D. 4 units (C)

Explanation : Using the distance formula,OA = $\sqrt{((1 - 0)^2 + (3 - 0)^2)}$= $\sqrt{(1 + 9)}$ = $\sqrt{10}$

6. If A(3, −2) and B(−1, 4) are two points, what is the distance between them?
   A. $\sqrt{37}$
   B. $\sqrt{41}$
   C. 6 units
   D. 5 units (B)

Explanation : AB = $\sqrt{((3 - (-1))^2 + (-2 - 4)^2)}$= $\sqrt{((4)^2 + (-6)^2)}$= $\sqrt{(16 + 36)}$ = $\sqrt{41}$

7. The distance of the point P(4, −5) from the x-axis is:
   A. 4 units
   B. 5 units
   C. 9 units
   D. 1 unit (B)

Explanation : The distance from the x-axis is the absolute value of the y-coordinate, so the distance is 5 units.

8. The coordinates of the midpoint of A(2, 3) and B(4, 7) are:
   A. (3, 5) B. (2, 5)
   C. (3, 4) D. (2, 3) (A)

Explanation : The midpoint is$((2 + 4)/2 , (3 + 7)/2)$ = (3, 5)

9. If the distance between points A(x_1, y_1) and B(x_2, y_2) is 10 units, what is the relation between the coordinates of A and B?
   A. $(x_2 - x_1)^2 + (y_2 - y_1)^2 = 10^2$
   B. $(x_2 + x_1)^2 + (y_2 + y_1)^2 = 10^2$
   C. $(x_2 - x_1)^2 - (y_2 - y_1)^2 = 10^2$
   D. $(x_2 - x_1)^2 + (y_2 + y_1)^2 = 10^2$ (A)

Explanation : The distance formula is$\sqrt{((x_2 - x_1)^2 + (y_2 - y_1)^2)}$ = 10Squaring both sides gives the required relation.

10. The distance between the point P(4, 3) and Q(−1, 1) is:
    A. $\sqrt{26}$
    B. $\sqrt{20}$
    C. 5 units
    D. 6 units (A)

Explanation : PQ = $\sqrt{((4 - (-1))^2 + (3 - 1)^2)}$= $\sqrt{((5)^2 + (2)^2)}$= $\sqrt{(25 + 4)}$ = $\sqrt{26}$