

# CHAPTER-7 | Coordinate Geometry

## QUIZ PART-07

1. If  $(1, 2)$ ,  $(4, y)$ ,  $(x, 6)$  and  $(3, 5)$  are vertices of a parallelogram in order, then  $x =$
- A. 5  
B. 6  
C. 7  
D. 8 (B)

**Explanation:** In a parallelogram, diagonals bisect each other. Using midpoint equality,  $x = 6$ .

2. If  $(1, 2)$ ,  $(4, y)$ ,  $(x, 6)$  and  $(3, 5)$  are vertices of a parallelogram in order, then  $y =$
- A. 2  
B. 3  
C. 4  
D. 5 (B)

**Explanation:** Equating the midpoints of the diagonals gives  $y = 3$ .

3. If AB is the diameter of a circle, its centre is  $(2, -3)$ , and B is  $(1, 4)$ , then the x-coordinate of A is:
- A. 1  
B. 2  
C. 3  
D. 4 (C)

**Explanation:** The centre is the midpoint of A and B. So,  $(x + 1)/2 = 2$ , which gives  $x = 3$ .

4. If AB is the diameter of a circle, its centre is  $(2, -3)$ , and B is  $(1, 4)$ , then the coordinates of A are:
- A.  $(3, -10)$                       B.  $(3, 10)$   
C.  $(-3, -10)$                     D.  $(2, -3)$  (A)

**Explanation:** Using the midpoint formula,  $(y + 4)/2 = -3$  gives  $y = -10$ . So  $A = (3, -10)$ .

5. If  $A = (-2, -2)$  and  $B = (2, -4)$ , and P lies on AB such that  $AP = 3/7 AB$ , then  $AP : PB =$
- A. 3 : 4  
B. 4 : 3  
C. 3 : 7  
D. 7 : 3 (A)

**Explanation:** If AP is  $3/7$  of AB, the remaining part PB is  $4/7$  of AB. Hence  $AP : PB = 3 : 4$ .

6. The coordinates of P on AB, where  $A = (-2, -2)$ ,  $B = (2, -4)$ , and  $AP : PB = 3 : 4$ , are:
- A.  $(2/7, -20/7)$   
B.  $(-2/7, -20/7)$   
C.  $(-2/7, 20/7)$   
D.  $(2/7, 20/7)$  (B)

**Explanation:** By section formula,  $P = ((3 \times 2 + 4 \times (-2))/7, (3 \times (-4) + 4 \times (-2))/7) = (-2/7, -20/7)$ .

7. One point that divides the line segment joining  $A(-2, 2)$  and  $B(2, 8)$  into four equal parts is:
- A.  $(-1, 7/2)$   
B.  $(0, 5)$   
C.  $(1, 13/2)$   
D.  $(2, 8)$  (A)

**Explanation:** The total change is  $(4, 6)$ . One-fourth change is  $(1, 3/2)$ . So first point =  $(-1, 7/2)$ .

8. The midpoint among the four equal divisions of the segment joining  $A(-2, 2)$  and  $B(2, 8)$  is:
- A.  $(-1, 7/2)$   
B.  $(0, 5)$   
C.  $(1, 13/2)$   
D.  $(2, 8)$  (B)

**Explanation:** The second division point is the midpoint of the segment, which is  $((-2 + 2)/2, (2 + 8)/2) = (0, 5)$ .

9. The length of diagonal AC of the rhombus with vertices  $(3, 0)$ ,  $(4, 5)$ ,  $(-1, 4)$ ,  $(-2, -1)$  is:
- A. 4                                      B.  $4\sqrt{2}$   
C. 6                                      D.  $6\sqrt{2}$  (B)

**Explanation:** AC is the distance between  $(3, 0)$  and  $(-1, 4)$ , which is  $\sqrt{[(-4)^2 + 4^2]} = \sqrt{32} = 4\sqrt{2}$ .

10. The area of the rhombus with vertices  $(3, 0)$ ,  $(4, 5)$ ,  $(-1, 4)$ ,  $(-2, -1)$  is:
- A. 12 sq units                      B. 18 sq units  
C. 24 sq units                      D. 36 sq units (C)

**Explanation:** Diagonals are  $4\sqrt{2}$  and  $6\sqrt{2}$ . Area of rhombus =  $1/2 \times d_1 \times d_2 = 1/2 \times 4\sqrt{2} \times 6\sqrt{2} = 24$  sq units.