UDAAN 2024

Coordinate Geometry

DHA-04

1. If $C(-1, 1)$ is the mid-point of the line segment joining $A(-3, b)$ and $B(1, b + 4)$, then the value of 'b' is:

(A) 1 (B) 3

(C) –1 (D) 2

2. Which of the following are the coordinates of the intersection points of the diagonals of the rectangle $ABCD$ with vertices $A(0, 3)$, $B(3, 0)$, $C(1, -2)$ and $D(-2, 1)$?

(A) $\left(\frac{1}{2}, \frac{1}{2}\right)$ (B) $\left(-\frac{1}{2}, -\frac{1}{2}\right)$

(C) (1.5, 1.5) (D) (2, –1)

3. If the line segment joining (2, 3) and (–1, 2) is divided internally in the ratio 3 : 4 by the graph of the equation $x + 2y = k$ then the value o 'k' is:

(A) $\frac{5}{7}$ (B) $\frac{31}{7}$

(C) $\frac{36}{7}$ (D) $\frac{41}{7}$

4. If the centroid of the triangle formed by $(9, a)$, $(b, -4)$ and (7, 8), is (6, 8), then the value of a and b are:

(A) $a = 4, b = 5$ (B) $a = 5, b = 4$

(C) $a = 5, b = 2$ (D) $a = 20, b = 2$

5. y-axis divides the line joining the points $P(-4, 2)$ and $Q(8, 3)$ in the ratio:

(A) 3 : 1 (B) 1 : 3

(C) 2 : 1 (D) 1 : 2

6. If a point $P\left(\frac{23}{5}, \frac{33}{5}\right)$ divides line AB joining two points $A(3, 5)$ and $B(x, y)$ internally in ratio 2 : 3, then the values of x and y will be:

(A) $x = 4, y = 7$ (B) $x = 5, y = 9$

(C) $x = 7, y = 9$ (D) $x = 7, y = 8$

7. The coordinates of the third vertex of an equilateral triangle whose two vertices are at (3, 4), (–2, 3) are:

(A) (1, 7)

(B) (5, 1)

(C) $\left(\frac{1+\sqrt{3}}{2}, \frac{7-5\sqrt{3}}{2}\right)$ or $\left(\frac{1-\sqrt{3}}{2}, \frac{7+5\sqrt{3}}{2}\right)$

(D) (–5, 5)

8. In right angled triangle ABC, $m\angle B = 90°$, ΔABC is in the first and second quadrant on the graph paper. The coordinates of the points A and C are (2, 5) and (–2, 3) respectively. Find the possible pairs of coordinates of point B from the following alternatives.

(A) (–2, 5) or (2, 3) (B) (5, 2) or (3, 2)

(C) (–2, 2) or (5, 3) (D) (2, –2) or (5, 3)

Note: Kindly find the Video Solution of DHAs Questions in the DPPs Section.

Answer Key

1. (C)

2. (A)

3. (D)

4. (D)

5. (D)

6. (C)

7. (C)

8. (A)

Hints and Solutions

1. (C) –1

2. (A) $\left(\frac{1}{2},\frac{1}{2}\right)$

3. (D) $\frac{41}{7}$

4. (D) $a = 20, b = 2$

5. (D) 1 : 2

6. (C) $x = 7, y = 9$

7. (C) $\left(\frac{1+\sqrt{3}}{2},\frac{7-5\sqrt{3}}{2}\right)$ or $\left(\frac{1-\sqrt{3}}{2},\frac{7+5\sqrt{3}}{2}\right)$

8. (A) (–2, 5) or (2, 3)

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