COORDINATE GEOMETRY

AREA OF TRIANGLE

EXERCISE

Q.1 If A(4, –6), B(3, –2) and C(5, 2) are the vertices of ΔABC, then verify the fact that a median of a triangle ABC divides it into two triangle of equal areas.

Q.2 Prove that the points (2, – 2), (–3, 8) and (–1, 4) are collinear.

Q.3 Prove that the points (a, b + c), (b, c + a) and (c, a + b) are collinear.

Q.4 For what value of k are the points (k, 2 – 2k) (–k + 1, 2k) and (–4 – k, 6 – 2k) are collinear ?

Q.5 If the coordinates of two points A and B are (3, 4) and (5, – 2) respectively. Find the coordinates of any point P, if PA = PB and Area of $\Delta PAB = 10$.

Q.6 The coordinates of A, B, C are (6, 3), (–3, 5) and (4, – 2) respectively and P is any point (x, y). Show that the ratio of the areas of triangle PBC and ABC is $\left|\frac{x+y-2}{7}\right|$.

Q.7 The area of the triangle whose vertices are (a,a), (a + 1, a + 1) and (a +2, a) is :

(A) a^3 (B) 1 (C) 2a (D) $2^{\frac{1}{2}}$

Q.8 The points (– a, – b), (0, 0), (a, b) and (a^2, ab) are :

(A) Collinear (B) Vertices of a parallelogram

(C) Vertices of a rectangle (D) None of these.

Q.9 If the co-ordinates of two points A and B are (3, 4) and (5, –2) respectively, then the co-ordinates of any point P if PA = PB and Area of = 10 is :

(A) (7, 2) or (1, 0) (B) (– 7, 2) or (3, 0)

(C) (7, – 2) or (5, 0) (D) (7, –2) or (–1, 0)

ANSWER KEY

4. K= -1 , $\frac{1}{2}$

7. B

8. B

9. A