1. Find the co-ordinates of point P which divides the join of A(r, -5) and B (6,3) in the ratio 2 : 5.
2. Find the ratio in which the point (5, 4) divides the line joining points (2, 1) and (7, 6)
3. In what ratio is the line joining the points (4, 2) and (3, -5) divided by the x-axis? Also, find the co-ordinated of the point of intersection.
4. Calculate the ratio in which the line joining the points (4, 6) and (-5, -4) is divided by the line y=3, Also, find the co-ordinates of the point of intersection.
5. The origin O, B(-6, 9) and C (12, -3) are vertices of triangle OBC. Point P divides OB in the ratio 1: 2 and point Q divides OC in the ratio 1 : 2. Find the co-ordinates of points P and Q. Also, show that : PQ $=\frac{1}{3}$ BC.
6. Find the co-ordinates of the points of trisection of the line segment joining the points A(6, -2) amd B (-8, 10)
7. Show that P (3, m-5) is a point of terisection of the line segment joining the points A (4, -2) and B (1,4) Hence, find the value of 'm'.
8. If the point P(-1, 2) divides the join of points A(2, 5) and B(a, b) in the ratio 3: 4, find the value of a x b-a.
9. Find the co-ordinates of the mid-point of the line segment joining the points P(4, -6) and Q(-2, 4).
10. The mid-point of line segment AB(shown in the diagram) is (-3, 5). Find the co-ordinates of A and B.
11. Points A(7, -4), B(-5, 5) and C (-3, 8) are vertices of triangle ABC. Find the length of its median through vertex A.
12. A(14, -2), B(6, -2) and D (8, 2) are the tree vertices of a parallelogram ABCD. Find the co-ordinates of the fourth vertex C.
13. The mid-point of the line segment joining (3m, 6) and (-4 3n) is (1, 2m-1). Find the values of m and n.
14. The point A (3, -5) is reflected in the point P(-4, 3) as point A'. Find the co-ordinates of point A'.

15. If the mid-point of the line segment joining the points A(3,4) and B(k, 6) is (x, y) and x + y = 10, find the value of k and the length of the line segment AB.

16. Find the co-ordinates of the point of intersection of the medians of triangle ABC; given A= (-2, 3) B=(6, 7) and C= (4, 1).

17. ABC is a triangle and G(4, 3) is the centroid of the triangle. If A= (1, 3), B = (4, b) and C = (a, 1), find 'a' and 'b'. find the length of side BC.