QUESTION :

If C be the centroid of the triangle having vertices (3,−1), (1,3) and (2, 4). Let P be the point of intersection of the lines x + 3y − 1 = 0 and 3x − y + 1 = 0, then the line passing through the points C and P also passes through the point:

(a) (-9, -7) (b) (-9, -6) (c) (7, 6) (d) (9, 7)

Answer: (b)

Solution:

The Coordinates of C are (2, 2)

Point of intersection of x + 3y − 1 = 0 and 3x − y + 1 = 0 is A(-1/5, 2/5)

Slope= 8/11

equation of line CA is y − 2 = (8/11)(x − 2)

8x − 11y + 6 = 0

and Point (-9, -6) lies on CP.