If $4a^2 + 9b^2 - c^2 + 12ab = 0$, the family of straight lines ax + by + c = 0 is either concurrent at (x', y') or at (x", y"). Then match the following if x' = 2.

(a) y'	(p) 2
(b) x"	(q) -2
(c) y"	(r) 3
	(s) -3

Solution

We have, $4a^2 + 9b^2 + 12ab = c^2$

$$\therefore (2a+3b)^2 = c^2$$

$$\therefore 2a + 3b = \pm c$$

Comparing 2a + 3b = c or 2a + 3b - c = 0 or (-2)a + (-3)b + c = 0 with ax + by + c = 0, we have the point of concurrency as (-2, -3).

Comparing 2a + 3b = -c or 2a + 3b + c = 0 with ax + by + c = 0, we have the point of concurrency as (2, 3).

