Q1 (25 July 2021 Shift 2)

Let the equation of the pair of lines, y = px and y = qx, can be written as $(y - px)(y - qx) = 0$

Then the equation of the pair of the angle bisectors of the lines $x^2 - 4xy - 5y^2 = 0$ is:

(1) $x^2 - 3xy + y^2 = 0$

(2) $x^2 + 4xy - y^2 = 0$

(3) $x^2 + 3xy - y^2 = 0$

(4) $x^2 - 3xy - y^2 = 0$

Answer Key

Q1 (3)

Q1

$\frac{x^2-y^2}{1-(-5)} = \frac{xy}{-2}$

$\frac{x^2-y^2}{6} = \frac{xy}{-2}$

$\Rightarrow x^2 - y^2 = -3xy$

$\Rightarrow x^2 + 3xy - y^2 = 0$