

Cramer's Rule :- $3x - 2y = 1$
 $-2x + 3y = 2$

$$b = \begin{bmatrix} 1 \\ 2 \end{bmatrix}$$

$$A = \begin{bmatrix} 3 & -2 \\ -2 & 3 \end{bmatrix} \quad D = |A| = \begin{vmatrix} 3 & -2 \\ -2 & 3 \end{vmatrix} = 9 - 4 = 5 \neq 0$$

$$A_1 = \begin{bmatrix} 1 & -2 \\ 2 & 3 \end{bmatrix} \quad D_1 = |A_1| = \begin{vmatrix} 1 & -2 \\ 2 & 3 \end{vmatrix} = 3 + 4 = 7$$

$$A_2 = \begin{bmatrix} 3 & 1 \\ -2 & 2 \end{bmatrix} \quad D_2 = |A_2| = \begin{vmatrix} 3 & 1 \\ -2 & 2 \end{vmatrix} = 6 + 2 = 8$$

$$x = \frac{D_1}{D} = \frac{7}{5} \quad y = \frac{D_2}{D} = \frac{8}{5}$$