Step-1

The given systems of equations is

$$3u + 2v = 7$$
$$4u + 3v = 11$$

We need to solve the given system by cramers rule

$$A = \begin{bmatrix} 3 & 2 \\ 4 & 3 \end{bmatrix}, \quad X = \begin{bmatrix} u \\ v \end{bmatrix}, \quad b = \begin{bmatrix} 7 \\ 11 \end{bmatrix}$$

Step-2

Replacing the first and second columns of A with b , we get the matrices A_1 and A_2

$$A_1 = \begin{bmatrix} 7 & 2 \\ 11 & 3 \end{bmatrix}, A_2 = \begin{bmatrix} 3 & 7 \\ 4 & 11 \end{bmatrix}$$

Now

$$\det(A) = |A| = \begin{vmatrix} 3 & 2 \\ 4 & 3 \end{vmatrix}$$

$$= (3)(3) - (2)(4)$$

$$= 1$$

Step-3

Now

$$\det(A_1) = |A_1| = \begin{vmatrix} 7 & 2 \\ 11 & 3 \end{vmatrix}$$

$$= (7)(3) - (2)(11)$$
$$= 21 - 22$$
$$= -1$$

$$\det(A_2) = |A_2| = \begin{vmatrix} 3 & 7 \\ 4 & 11 \end{vmatrix}$$

$$= (3)(11) - (7)(4)$$

$$= 5$$

Step-4

Thus, by cramers rule we have

$$u = \frac{\det(A_1)}{\det(A)}$$

$$= \frac{-1}{1}$$

$$= -1$$

Step-5

And

$$v = \frac{\det(A_2)}{\det(A)}$$

$$= \frac{5}{1}$$

$$= 5$$

Thus, the solution for the given system is $\boxed{u = -1 \text{ and } v = 5}$