SOLVE SIMULTANEOUS LINEAR EQUATION USING CROUT'S METHOD

2. Solve $\begin{matrix} 2x + y - 3z = 5 \\ 4x - 2y + 2z = -2 \\ 14x + 6y + 5z = 8 \end{matrix}$ Using Crout's Method

SOLUTION

A X = B

$$\begin{bmatrix} & & \end{bmatrix}\begin{bmatrix} \end{bmatrix} = \begin{bmatrix} \end{bmatrix}$$

A = L U

$$\begin{bmatrix} & & \end{bmatrix} = \begin{bmatrix} & & \end{bmatrix}\begin{bmatrix} & & \end{bmatrix}$$

$$= \begin{bmatrix} & & \end{bmatrix}$$

$=$

$a =$	$ag =$ $g =$	$ah =$ $h =$
$b =$	$bg + c =$ $(\ )(\ ) + c =$ $c =$	$bh + ci =$ $(\ )(\ ) + (\ )i =$ $i =$
$d =$	$dg + e =$ $(\ )(\ ) + e =$ $e =$	$dh + ei + f =$ $(\ )(\ ) + (\ )(\ ) + f =$ $f =$

So the value of $L = \begin{bmatrix} & \\ & \end{bmatrix}$ and $U = \begin{bmatrix} & \\ & \end{bmatrix}$

LY = B

$$\begin{bmatrix} & \\ & \end{bmatrix} \times \begin{bmatrix} y_1 \\ y_2 \\ y_3 \end{bmatrix} = \begin{bmatrix} \\ \end{bmatrix}$$

$$\begin{matrix} (\ )y_1 \\ (\ )y_1 - (\ )y_2 \\ (\ )y_1 - (\ )y_2 - (\ )y_3 \end{matrix} = \begin{bmatrix} \\ \end{bmatrix}$$

$y_1 =$ $y_2 =$ $y_3 =$

UX = Y

$$\begin{bmatrix} & \\ & \end{bmatrix} \times \begin{bmatrix} x \\ y \\ z \end{bmatrix} = \begin{bmatrix} \\ \end{bmatrix}$$

$$\begin{matrix} (\ )x + (\ )y + (\ )z \\ (\ )y - (\ )z \\ (\ )z \end{matrix} = \begin{bmatrix} \\ \end{bmatrix}$$

$z =$ $y =$ $x =$