7
a

$$M_1 A = \begin{bmatrix} 1 & 0 & 0 & 0 \\ -1/4 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix} \begin{bmatrix} \cdots \end{bmatrix} = \begin{bmatrix} 4 & 1 & 0 & 0 \\ 0 & 3/4 & 1 & 0 \\ 0 & 1 & 4 & 1 \\ 0 & 0 & 1 & 4 \end{bmatrix}$$

M_1 $\qquad$ A

$$M_2 M_1 A = \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & -4/3 & 1 & 0 \\ 0 & 0 & -3/8 & 1 \end{bmatrix} \begin{bmatrix} \cdots \end{bmatrix} = \begin{bmatrix} 4 & 1 & 0 & 0 \\ 3/4 & 1 & 0 & 0 \\ 0 & 8/3 & 1 & 0 \\ 0 & 0 & 29/8 & 1 \end{bmatrix} = MA = U$$

M_2 $\qquad$ $M_1 A$

$$Mb = \begin{bmatrix} \cdots \end{bmatrix} \begin{bmatrix} 2 \\ -3 \\ 3 \\ -2 \end{bmatrix} = \begin{bmatrix} 2 \\ 5/2 \\ 7 \\ -25/8 \end{bmatrix} = y$$

M $\qquad$ b

$$MA = y$$

$$\begin{bmatrix} 4 & 1 & 0 & 0 \\ 3/4 & 1 & 0 & 0 \\ 0 & 8/3 & 1 & 0 \\ 0 & 0 & 29/8 & 1 \end{bmatrix} \begin{bmatrix} x_1 \\ x_2 \\ x_3 \\ x_4 \end{bmatrix} = \begin{bmatrix} 2 \\ 5/2 \\ 7 \\ -25/8 \end{bmatrix}$$

$$\begin{cases} 4x_1 + x_2 = 2 \\ 3/4\, x_2 - x_3 = 5/2 \\ 8/3\, x_3 - x_4 = 7 \\ 29/8\, x_4 = -25/8 \end{cases}$$

NOW I WOULD SOLVE FOR x BY BACK-SUB