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$$EA = \begin{bmatrix} 1 & 0 & 0 & 0 \\ -1/4 & 1 & 0 & 0 \\ 0 & -4/15 & 1 & 0 \\ 0 & 0 & -15/56 & 1 \end{bmatrix} \begin{bmatrix} 4 & 1 & 0 & 0 \\ 1 & 4 & 1 & 0 \\ 0 & 1 & 4 & 1 \\ 0 & 0 & 1 & 4 \end{bmatrix} = \begin{bmatrix} 4 & 1 & 0 & 0 \\ 0 & 15/4 & 1 & 0 \\ 0 & 0 & 56/15 & 1 \\ 0 & 0 & 0 & 209/56 \end{bmatrix} = U$$

$$A = E^{-1}U = LU$$

$$Ly = \begin{bmatrix} 1 & 0 & 0 & 0 \\ 1/4 & 1 & 0 & 0 \\ 0 & 4/15 & 1 & 0 \\ 0 & 0 & 15/56 & 1 \end{bmatrix} \begin{bmatrix} y_1 \\ y_2 \\ y_3 \\ y_4 \end{bmatrix} = \begin{bmatrix} 2 \\ -3 \\ 3 \\ 2 \end{bmatrix} = b$$

$$\begin{cases} y_1 = 2 \\ \frac{1}{4}y_1 + y_2 = -3 \\ \frac{4}{15}y_2 + y_3 = 3 \\ \frac{15}{56}y_3 + y_4 = -2 \end{cases}$$

$y_2 = -3 - \frac{1}{2} = -3.5$

$y_3 = 3 - \frac{4}{15}(-3.5) \cong 3.933$

$y_4 \cong -2 - \frac{15}{56}(3.933) \cong -3.053$