

$$E_1 P_1 A = \begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 3/5 & 0 & 1 \end{bmatrix} \begin{bmatrix} -5 & 2 & -1 \\ 1 & 0 & 3 \\ 3 & 1 & 6 \end{bmatrix} = \begin{bmatrix} -5 & 2 & -1 \\ 1 & 0 & 3 \\ 0 & 1/5 & 24/5 \end{bmatrix} \left\{ \begin{array}{l} P_2 E_1 P_1 A = \begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 1 & 0 \end{bmatrix} \begin{bmatrix} -5 & 2 & -1 \\ 1 & 0 & 3 \\ 0 & 1/5 & 24/5 \end{bmatrix} \dots \end{array} \right.$$

$$E_2 P_2 E_1 P_1 A = \begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 1/5 & 0 & 1 \end{bmatrix} \begin{bmatrix} -5 & 2 & -1 \\ 0 & 1/5 & 24/5 \\ 1 & 0 & 3 \end{bmatrix} = \begin{bmatrix} -5 & 2 & -1 \\ 0 & 1/5 & 24/5 \\ 0 & 13/5 & 14/5 \end{bmatrix} \left\{ \begin{array}{l} P_3 E_2 P_2 E_1 P_1 A = \dots \end{array} \right.$$

$$E_3 P_3 \dots E_1 P_1 A = \begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 1/13 & 1 \end{bmatrix} \begin{bmatrix} -5 & 2 & -1 \\ 0 & 13/5 & 14/5 \\ 0 & 1/5 & 24/5 \end{bmatrix} = \begin{bmatrix} -5 & 2 & -1 \\ 0 & 13/5 & 14/5 \\ 0 & 0 & 194/65 \end{bmatrix} \left\{ \begin{array}{l} \dots = \begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 1 & 0 \end{bmatrix} \begin{bmatrix} -5 & 2 & -1 \\ 0 & 13/5 & 14/5 \\ 0 & 0 & 194/65 \end{bmatrix} \dots \end{array} \right.$$

$$L = E^{-1} = E_1^{-1} E_2^{-1} E_3^{-1} = \begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ -3/5 & 0 & 1 \end{bmatrix} \begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 1/5 & 1/13 & 1 \end{bmatrix} = \begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ -4/5 & 1/13 & 1 \end{bmatrix}$$