6.2.3 Gauss Transforms

Homework 6.2.3.1
Compute ONLY the values in the boxes. A $\star$ means a value that we don't care about.

- $\begin{pmatrix} 1 & 0 & 0 \\ -2 & 1 & 0 \\ 0 & 0 & 1 \end{pmatrix} \begin{pmatrix} 2 & 4 & -2 \\ 4 & -2 & 6 \\ 6 & -4 & 2 \end{pmatrix} = \begin{pmatrix} \square & \square & \square \\ \square & \square & \square \\ \square & \square & \square \end{pmatrix}$.
- $\begin{pmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 345 & 0 & 1 \end{pmatrix} \begin{pmatrix} 2 & 4 & -2 \\ 4 & -2 & 6 \\ 6 & -4 & 2 \end{pmatrix} = \begin{pmatrix} \square & \square & \square \\ \square & \square & \square \\ \star & \star & \star \end{pmatrix}$.
- $\begin{pmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ -3 & 0 & 1 \end{pmatrix} \begin{pmatrix} 2 & 4 & -2 \\ 4 & -2 & 6 \\ 6 & -4 & 2 \end{pmatrix} = \begin{pmatrix} \square & \square & \square \\ \square & \square & \square \\ \square & \square & \square \end{pmatrix}$.
- $\begin{pmatrix} 1 & 0 & 0 \\ \square & 1 & 0 \\ 0 & 0 & 1 \end{pmatrix} \begin{pmatrix} 2 & 4 & -2 \\ 2 & -2 & 6 \\ 6 & -4 & 2 \end{pmatrix} = \begin{pmatrix} \square & \square & \square \\ 0 & \square & \square \\ \square & \square & \square \end{pmatrix}$.
- $\begin{pmatrix} 1 & 0 & 0 \\ \square & 1 & 0 \\ \square & 0 & 1 \end{pmatrix} \begin{pmatrix} 2 & 4 & -2 \\ 2 & -2 & 6 \\ -4 & -4 & 2 \end{pmatrix} = \begin{pmatrix} \square & \square & \square \\ 0 & \square & \square \\ 0 & \square & \square \end{pmatrix}$.
- $\begin{pmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & \square & 1 \end{pmatrix} \begin{pmatrix} 2 & 4 & -2 \\ 0 & -10 & 10 \\ 0 & -16 & 8 \end{pmatrix} = \begin{pmatrix} \square & \square & \square \\ \square & \square & \square \\ \square & 0 & \square \end{pmatrix}$.
- $\begin{pmatrix} 1 & 0 & \square \\ 0 & 1 & \square \\ 0 & 0 & 1 \end{pmatrix} \begin{pmatrix} 2 & 4 & -8 \\ 1 & 1 & -4 \\ -1 & -2 & 4 \end{pmatrix} = \begin{pmatrix} \square & \square & 0 \\ \square & \square & 0 \\ \square & \square & \square \end{pmatrix}$.