MATH 406 Session 32

1. Find the image of the line $\begin{bmatrix}1 & 2 & 3\end{bmatrix}\begin{bmatrix}x\\ y\\ 1\end{bmatrix}=0$ **under the transformation** $T_1(\bar{u})=\begin{bmatrix}1 & 0 & 2\\ 0 & -1 & 1\\ 0 & 0 & 1\end{bmatrix}\bar{u}.$

a. Apply Theorem 4.2.4 and verify by another method. (See proof of Thm 4.2.4)

b. Does T_1 have any invariant points?

2. Consider the transformation $T_2(\bar{u}) = \begin{bmatrix} 0 & 1 & 0 \\ 1 & 0 & 0 \\ 0 & 0 & 1 \end{bmatrix} \bar{u}$. **Find any invariant points and lines under** T_2.