Matrix Analysis and Linear Algebra – MAT 335

Homework – Section 7.3

NO I. For each matrix $\mathbf{A}$, find bases for null($\mathbf{A}$), col($\mathbf{A}$), and row($\mathbf{A}$).

1. $\begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$

2. $\begin{bmatrix} 1 & 2 \\ 3 & 4 \\ 5 & 6 \end{bmatrix}$

3. $\begin{bmatrix} -2 & 1 \\ -4 & 2 \\ 4 & -2 \end{bmatrix}$

NO II. Use two different methods to find the orthogonal complement of the set $S = \{\mathbf{v}_1 = (2, 0, -1), \mathbf{v}_2 = (1, 1, 5)\}$ in an xyz-coordinate system.

NO III. Let W be the line in $\mathbb{R}^2$ with equation $y = 2x$. Find an equation for $W^{\perp}$.