HW 4.2 #1. Explain why $\vec{v}$ is (or is not) in the null space of A where $\vec{v} = \begin{bmatrix} 1 \\ 3 \\ -4 \end{bmatrix}$ and

$A = \begin{bmatrix} 3 & -5 & -3 \\ 6 & -2 & 0 \\ -8 & 4 & 1 \end{bmatrix}$

HW 4.2 #3. Find vectors $\vec{v_1}$ and $\vec{v_2}$ so that $\text{Nul}(A)$ is the span of $\vec{v_1}$ and $\vec{v_2}$ where $A = \begin{bmatrix} 1 & 2 & 4 & 0 \\ 0 & 1 & 3 & -2 \end{bmatrix}$.

HW 4.2 #7. Explain W is (or is not) a subspace where $W = \left\{ \begin{bmatrix} a \\ b \\ c \end{bmatrix} : a + b + c = 2 \right\}$

HW 4.2 #31. Find a vector (polynomial) $\vec{v}$ the spans $\text{Nul}(T)$ where T is the linear transformation $T(p) = \begin{bmatrix} p(0) \\ p(1) \end{bmatrix}$ that takes a quadratic (or lower degree) polynomial to its values at 0 and 1.

Find a basis for the column space of A from HW 4.2 #3.

Find a basis for the image (column space) of T from HW 4.2 #31.