HOMEWORK 7-PART B+C

1. Find on basis for the space Null(A), where $A = \begin{pmatrix} 5 & 2 & 1 & 1 \\ 6 & 1 & 4 & 10 \\ 8 & 0 & 8 & 0 \\ 2 & 1 & 0 & 6 \end{pmatrix}$.

2. Find one basis for the space $\text{Span}\{v_1, v_2, v_3, v_4\}$, where

$$v_1 = \begin{pmatrix} 9 \\ 1 \\ 2 \\ 1 \end{pmatrix}, \ v_2 = \begin{pmatrix} 2 \\ 1 \\ 0 \\ 8 \end{pmatrix}, v_3 = \begin{pmatrix} 1 \\ 3 \\ 2 \\ 9 \end{pmatrix}, \ v_4 = \begin{pmatrix} 4 \\ 3 \\ 0 \\ 4 \end{pmatrix}.$$

3. Determine whether the following matrices are nonsingular or not.

$$A = \begin{pmatrix} 2 & 1 & 5 \\ 1 & 3 & 7 \\ 2 & 1 & 2 \end{pmatrix} \text{ and } B = \begin{pmatrix} 9 & 2 & 1 \\ 0 & 1 & 3 \\ 2 & 0 & 8 \end{pmatrix}.$$