1. Calculate the inverse for the matrix below.
   (If you have time you should check your answer!)

$$\begin{bmatrix} 1 & -6 & 3 \\ 1 & -5 & 3 \\ -2 & 8 & -5 \end{bmatrix}$$

2. Calculate the LU factorization for the matrix below.
   (If you have time you should check your answer!)

$$\begin{bmatrix} 1 & 3 & 2 & 0 \\ -2 & -3 & -4 & 12 \\ 3 & 0 & 4 & -36 \\ -5 & -3 & -8 & 49 \end{bmatrix}$$