1) Find a linear system with 3 equations and 3 variables that has $\vec{x} = \begin{bmatrix} 1 \\ 2 \\ 3 \end{bmatrix}$ as the unique solution.

2) Find a linear system with 2 equations and 3 variables that has $\vec{x} = \begin{bmatrix} 1 \\ 2 \\ 0 \end{bmatrix} + s \begin{bmatrix} 0 \\ 3 \\ 1 \end{bmatrix}$ as the general solution.

3) Graph the set $\left\{ c_1 \begin{bmatrix} 0 \\ 5 \end{bmatrix} + c_2 \begin{bmatrix} 3 \\ 7 \end{bmatrix} \middle| c_2 \geq 0, c_1, c_2 \in \mathbb{R} \right\}$