(1) Let $A = \begin{bmatrix} 3 & 1 \\ 2 & 1 \end{bmatrix}$ and $B = \begin{bmatrix} 1 & -1 \\ -2 & 3 \end{bmatrix}$.

    (a) Calculate the general solution to $A\vec{x} = \vec{b}$.

    (b) Calculate the general solution to $B\vec{y} = \vec{c}$.

    (c) Compare your answers. What do you notice?