

b-

$$(sI - A) = \frac{1}{s^3 + 13s^2 + 51s + 63}$$

V  
 $\Delta(s)$

$$\begin{bmatrix} s+a & 0 & 0 \\ 0 & s+b & 0 \\ 0 & 0 & s+c \end{bmatrix}$$

$$\frac{Y(s)}{U(s)} = [1 \ 0 \ 1] \cdot \begin{bmatrix} \frac{s+a}{\Delta(s)} & 0 & 0 \\ 0 & \frac{s+b}{\Delta(s)} & 0 \\ 0 & 0 & \frac{s+c}{\Delta(s)} \end{bmatrix}$$

$$\frac{Y(s)}{U(s)} = \begin{bmatrix} \frac{s+a}{\Delta(s)} & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & \frac{s+c}{\Delta(s)} \end{bmatrix} \cdot \begin{bmatrix} 1 & 0 \\ 1 & 1 \\ 0 & 1 \end{bmatrix}$$

$$\frac{Y(s)}{U(s)} = \begin{bmatrix} \frac{s+a}{\Delta(s)} & 0 \\ 0 & 0 \\ 0 & \frac{s+c}{\Delta(s)} \end{bmatrix}$$

$$\begin{matrix} s+a \\ s+c \end{matrix}$$

$$\frac{Y(s)}{U(s)} = \frac{2s+30}{s^3}$$