MECH 6300-HW 3

1)

b)

$$A = \begin{bmatrix} 0 & 1 & 0 \\ 0 & 0 & 1 \\ 4 & 2 & 0 \end{bmatrix}$$

$$N(s) = |sI - A| = \begin{vmatrix} s & -1 & 0 \\ 0 & s & -1 \\ -4 & -2 & s \end{vmatrix}$$

$$= s(s^2 - 2) + 4(0 - 4)$$

$$= s^3 - 2s - 4$$

$$\Delta(s) = (s-2)(s-(-1+j))(s-(-1-j))$$

$$T = \begin{bmatrix} 2 & 0 & 0 \\ 0 & -1+j & 0 \\ 0 & 0 & -1-j \end{bmatrix}$$