MECH 6300-HW 3

1) d)

$$A = \begin{bmatrix} 0 & 2 & 6 \\ 0 & 40 & 32 \\ 0 & -50 & -40 \end{bmatrix}$$

$$N(s) = |sI - A| = \begin{vmatrix} s & -8 & -6 \\ 0 & s-40 & -32 \\ 0 & 50 & s+40 \end{vmatrix}$$

$$= s^3 - \cancel{160} + \cancel{160}$$

$$\boxed{\Delta(s) = s^3}, \quad \lambda_1 = 0, \; m_1 = 3$$

$$P(A - \lambda_1 I) = P(A)$$

$$P(A) = 2$$

$$\gamma(A - \lambda_1 I) = 1$$

$$\boxed{J = \begin{bmatrix} 0 & 1 & 0 \\ 0 & 0 & 1 \\ 0 & 0 & 0 \end{bmatrix}}$$