

HOMEWORK ASSIGNMENT 7

(Due Tuesday March 25, 2008 in class)

Solve the differential equation $\dot{\mathbf{u}}(\mathbf{t}) = A\mathbf{u}(\mathbf{t})$ for the following matrices A :

$$(a) \begin{pmatrix} 1 & -4 \\ 2 & -3 \end{pmatrix}, (b) \begin{pmatrix} 0 & 2 \\ -2 & 0 \end{pmatrix}$$

$$(c) \begin{pmatrix} 2 & 0 & 0 \\ -6 & 1 & -4 \\ -3 & 0 & -1 \end{pmatrix}, (d) \begin{pmatrix} -4 & 0 & 2 \\ 12 & 2 & -6 \\ -6 & 0 & 3 \end{pmatrix}, (e) \begin{pmatrix} -4 & 8 & 8 \\ -4 & 4 & 2 \\ 0 & 0 & 2 \end{pmatrix},$$

$$(f) \begin{pmatrix} 6 & 0 & -4 \\ 8 & -2 & 0 \\ 8 & 0 & -2 \end{pmatrix}, (g) \begin{pmatrix} -1 & 0 & 0 \\ -1 & 1 & -1 \\ -2 & 4 & -3 \end{pmatrix}, (h) \begin{pmatrix} -1 & -1 & 0 \\ -1 & 0 & -1 \\ -1 & 2 & -2 \end{pmatrix},$$

$$(k) \begin{pmatrix} -2 & -1 & 0 \\ 0 & 0 & 1 \\ 0 & -4 & -4 \end{pmatrix}, (l) \begin{pmatrix} -2 & 0 & 0 \\ 0 & -2 & 0 \\ -1 & 1 & -2 \end{pmatrix}, (m) \begin{pmatrix} -2 & 1 & -1 \\ 1 & -3 & 0 \\ 3 & -5 & 0 \end{pmatrix},$$

$$(n) \begin{pmatrix} 1 & 0 & 1 \\ 2 & 2 & -2 \\ 0 & 0 & 2 \end{pmatrix}, (o) \begin{pmatrix} 0 & 1 & 0 \\ -4 & 4 & 0 \\ -2 & 0 & 1 \end{pmatrix}, (p) \begin{pmatrix} -1 & 0 & 0 \\ 2 & -5 & -1 \\ 0 & 4 & -1 \end{pmatrix}$$