Maple Project 10

Directions. This project is due in class on Thursday, April 6, 2000 and will be attached to Quiz 10. Please prepare your project by modifying the given instructor provided templates.

1. Let $A = \begin{bmatrix} -1 & 1 & 0 \\ 1 & 2 & 1 \\ 0 & 3 & -1 \end{bmatrix}$.

   (a) Adapt the section of the system-eigenvalues.mws worksheet on real eigenvalues to calculate the eigenvalues and eigenvectors of $A$.

   (b) Use the system-solve-real.mws worksheet to solve the system initial value problem

   $$x'(t) = Ax(t), \quad x(0) = \begin{bmatrix} -1 \\ 1 \\ 3 \end{bmatrix}.$$  

2. Use the system-solve-real.mws worksheet to solve the system initial value problem

   $$x'(t) = \begin{bmatrix} -7 & 0 & 6 \\ 0 & 5 & 0 \\ 6 & 0 & 2 \end{bmatrix} x(t), \quad x(0) = \begin{bmatrix} -1 \\ 1 \\ 3 \end{bmatrix}.$$