

Homework #1 -- due Friday, 18 January 2008 *** turn in just starred (*) questions ***

Exercises at end of Chapter 1: 1, 3 (linear, but with different parameters)

Exercises at end of Appendix A: 3, 4, 5, 9, 12*, 18*, 19*, 20*, 21*, 22, 69*

x) Solve the system of equations
$$\begin{bmatrix} 4 & 10 \\ 10 & 20 \end{bmatrix} \begin{bmatrix} x_1 \\ x_2 \end{bmatrix} = \begin{bmatrix} 1 \\ 1 \end{bmatrix}$$

y) Find the eigenvalues and eigenvectors of the matrix
$$\begin{bmatrix} 31 & -3 \\ -3 & 39 \end{bmatrix}$$

z) Is this matrix positive definite?
$$\begin{bmatrix} 4 & 10 \\ 10 & 30 \end{bmatrix}$$