

Course 2E1 2006-07 (SF Engineers & MSISS & MEMS)**S h e e t 22**

Due: at the end of the tutorial

Exercise 1

Find the eigenvalues and the corresponding eigenvectors of the following matrices:

(i) $A = \begin{pmatrix} -1 & 0 \\ 1 & -2 \end{pmatrix};$

(ii) $A = \begin{pmatrix} 1 & -1 & -2 \\ 0 & 3 & 2 \\ 0 & 3 & 2 \end{pmatrix};$

Exercise 2

Find a matrix P that diagonalizes each matrix A in Exercise 1 and determine the corresponding diagonal matrix $D = P^{-1}AP$.