UNIVERSITY
OF WOLLONGONG
IN DUBAI

MATH 141 Tutorial 9

Problem 1

Find the eigenvalues of $A = \begin{bmatrix} 0 & 1 \\ -6 & 5 \end{bmatrix}$.

Problem 2

Find the eigenvalues of $A = \begin{bmatrix} 1 & 2 & 1 \\ 0 & -5 & 0 \\ 1 & 8 & 1 \end{bmatrix}$.

Problem 3

Let

$$A = \begin{bmatrix} 3 & -2 \\ -2 & 3 \end{bmatrix}, \quad \mathbf{u} = \begin{bmatrix} -1 \\ 1 \end{bmatrix}, \text{ and } \quad \mathbf{v} = \begin{bmatrix} 2 \\ 1 \end{bmatrix}.$$

(1) Are **u** and **v** eigenvectors of A?
(2) Show that 1 is an eigenvalue of A.