

MthSc 208: Differential Equations (Spring 2011)
In-class Worksheet 4a: Basic linear algebra

NAME:

Let $\mathbf{A} = \begin{pmatrix} -2 & 1 \\ 4 & 1 \end{pmatrix}$.

1. Compute $\det \mathbf{A}$.

2. Compute \mathbf{A}^{-1} .

3. Solve the system of equations $\begin{cases} -2x_1 + x_2 = 12 \\ 4x_1 + x_2 = 18 \end{cases}$

4. Compute the eigenvalues of $\mathbf{A} = \begin{pmatrix} -2 & 1 \\ 4 & 1 \end{pmatrix}$.

5. Compute the corresponding eigenvectors of \mathbf{A} .