Linear Systems with Complex Eigenvalues
Math 230

Use technology to compute the eigenvalues of each of the following matrices. Use the eigenvalues to determine the type of equilibrium point at the origin, and make a quick sketch of the phase portrait for the system.

1. $\mathbf{A} = \begin{bmatrix} -2 & 5 \\ -1 & 2 \end{bmatrix}$

2. $\mathbf{A} = \begin{bmatrix} 1 & -2 \\ 2 & -2 \end{bmatrix}$

3. $\mathbf{A} = \begin{bmatrix} 1 & 4 \\ -2 & 3 \end{bmatrix}$