

Name: _____

1. (a) **[5 points]** Find the general solution to $\mathbf{x}' = \begin{bmatrix} 0 & 1 \\ 2 & 1 \end{bmatrix} \mathbf{x}$.

- (b) **[2 points]** Draw a phase portrait.

2. [3 points] Find all solutions to $z^2 - 4z + (4 + 2i) = 0$.