

6. [14 points] Suppose that the phase portrait to the right is the phase portrait for a system of differential equations $\mathbf{x}' = \mathbf{A}\mathbf{x}$, where \mathbf{A} is a 2×2 constant, real-valued matrix. If the system is obtained by rewriting a second order equation as a system of first-order equations, give a possible matrix for \mathbf{A} . Explain how you know your choice is correct.

