

- (1) [**5 pts.**] Please sketch the direction field for $\dot{x} = x(1 - x)$.
- (2) Consider the equation $\ddot{x} - 3\dot{x} + 2x = 0$.
 - (a) [**4 pts.**] Convert this equation into a system of two first order equations.
 - (b) [**3 pts.**] Compute the eigenvalues.
 - (c) [**8 pts.**] Compute the eigenvectors.