1. Find all solutions to $\frac{dx}{dt} = rx - x^2$ where $x(t) = c$ with c a constant (these are all of the equilibrium solutions).

2. Show the mathematical steps to find a solution to $\frac{dx}{dt} = -2x$, $x(0) = 7$.

3. Classify the stability of the equilibrium solutions of $\dfrac{dx}{dt} = -2(x+1)(x-2)$.