

# Nonlinear Control Systems

## Homework #1

(Due date: March 12, 2012)

March 2, 2012

1. For the following system

$$\begin{aligned}\dot{x}_1 &= 2x_1 - x_1x_2 \\ \dot{x}_2 &= 2x_1^2 - x_2\end{aligned}$$

Find all the equilibrium points, sketch the phase portrait, and determine the type of each isolated equilibrium.