

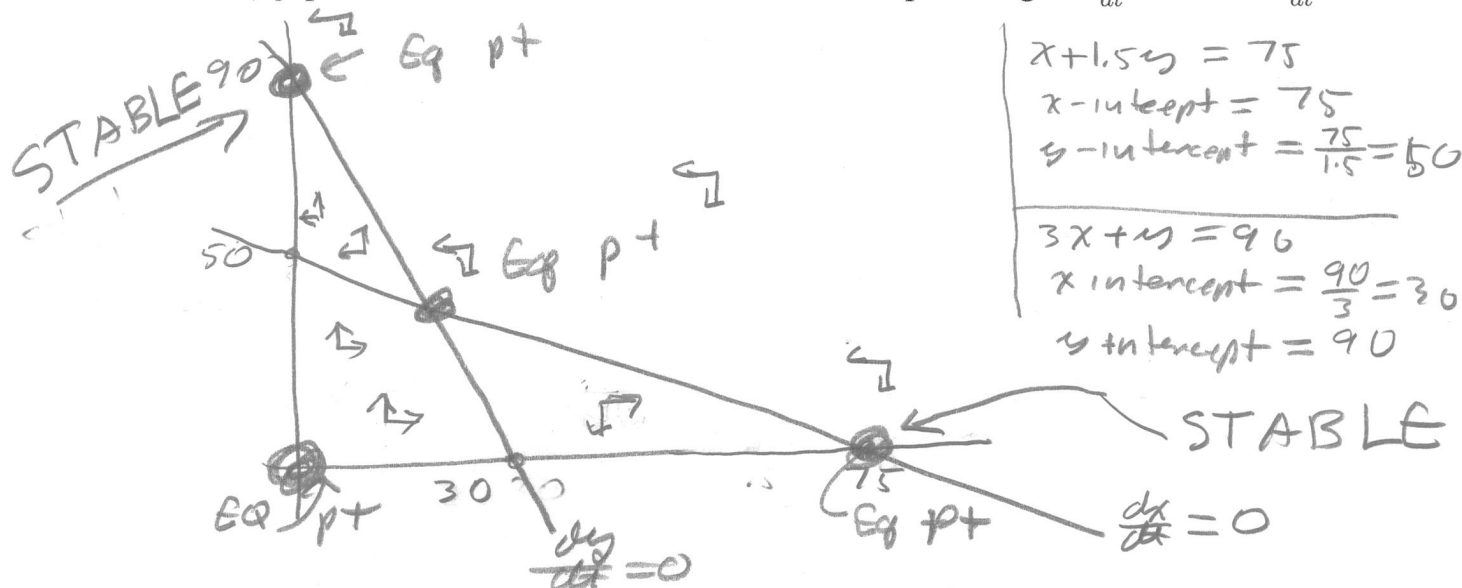
You must show your work to get full credit.

Consider two competing species of sunfish in a small pond. Assume that $x(t)$ is the number of the first species and $y(t)$ is the number of the second species after t years that these satisfy

$$\frac{dx}{dt} = .02x \left(\frac{75 - x - 1.5y}{75} \right)$$

$$\frac{dy}{dt} = .15y \left(\frac{90 - 3x - y}{90} \right)$$

1. In the x, y plane draw and label the lines corresponding to $\frac{dx}{dt} = 0$ and $\frac{dy}{dt} = 0$.



2. There are four equilibrium points. Label them. (You don't have to compute them exactly, just label them on your graph.)

3. Which of the equilibrium points are stable? (Again you don't have to find them exactly, just label them on your graph.)