Monday, June 9, 2025 3:08 PM

$$\begin{cases} x'(t) = x - xy^2 \\ y'(t) = x - y \end{cases}$$

$$\begin{cases} x - xy^2 = 0 \\ x - y = 0 \Rightarrow x = y \end{cases} \Rightarrow x - x^3 = 0$$

$$\Rightarrow x(1 - x^2) = 0$$

$$\Rightarrow x = 0 = y$$

$$\Rightarrow x = 1 = y$$

$$\Rightarrow x = -1 = y$$

$(0,0)$, $(1,1)$, $(-1,-1)$ pct de echilibru

$$J_f(x,y) = \begin{pmatrix} \frac{\partial f_1}{\partial x}(x,y) & \frac{\partial f_1}{\partial y}(x,y) \\ \frac{\partial f_2}{\partial x}(x,y) & \frac{\partial f_2}{\partial y}(x,y) \end{pmatrix}$$

$$\det(\lambda I_2 - J_f(x,y)) = 0 \Rightarrow \lambda_1, \lambda_2$$