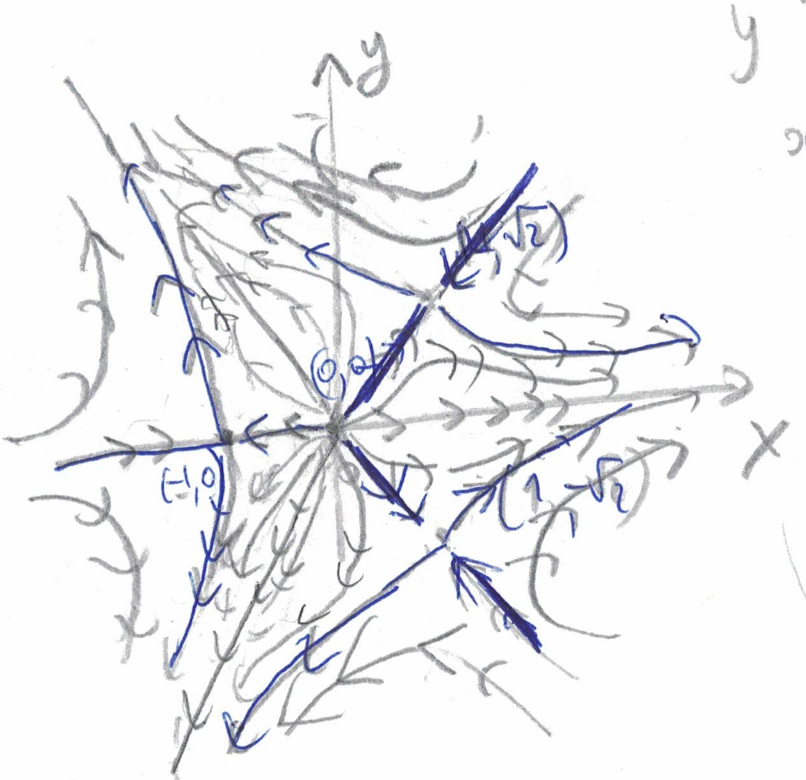
Also $y(0)=0 \Rightarrow y(t)=0$ (because $y'=y(1-x) \Rightarrow$

$x'=x(1+x)$)



Separatrices of all saddles are denoted by blue

Another observation is: If $\begin{pmatrix} x(t) \\ y(t) \end{pmatrix}$ is a solution, then also $\begin{pmatrix} x(t) \\ -y(t) \end{pmatrix}$ is a solution

$\Rightarrow$ the phase portrait is symmetric w.r.t. the x-axis

Remark One can show that if $x(t)$ is a solution of the single equation $x'=x-x^2$ then $\begin{pmatrix} x(t) \\ \pm\sqrt{2}x(t) \end{pmatrix}$ is a solution of our system $\Rightarrow$ the stable separatrices of $(1,\pm\sqrt{2})$ coinside with the lines $y=\pm\sqrt{2}x$

(this is already a specifics of the given system, does not follow from the general theory.