

The eigenvectors are found from

$$\begin{pmatrix} 4-4 & 0 \\ 1 & 4-4 \end{pmatrix} \begin{pmatrix} x \\ y \end{pmatrix} = \begin{pmatrix} 0 & 0 \\ 1 & 0 \end{pmatrix} \begin{pmatrix} x \\ y \end{pmatrix} = 0$$

The only eigenvector is $\begin{pmatrix} 0 \\ 1 \end{pmatrix}$. This

fixed point is a ^{strongly} unstable improper node, since there is only one eigenvector and eigenvalue and $\lambda > 0$.

Note
printed
solns
wrong!

$\dot{x} = x^2 - 4 = (x-2)(x+2)$. \therefore if $x = -2, 2$
 $\dot{x} = 0$. The phase curves are
parallel to y-axis for $x = -2, 2$

18
18

Total 25