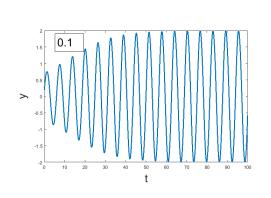
# Física Computacional

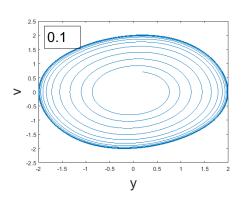
# TRABALHO 4 – Soluções

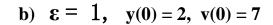
## Problema 4.1

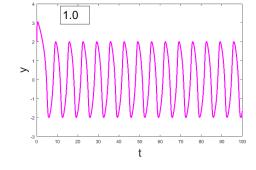
Oscilador de van der Pol (RK3)

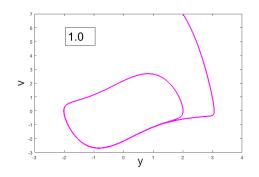
a) 
$$\varepsilon = 0.1$$
,  $y(0) = 0.2$ ,  $v(0) = 0.7$ 







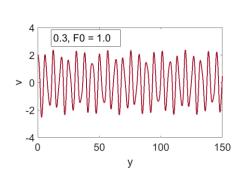


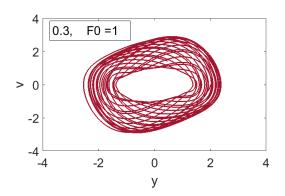


#### Problema 4.2

Oscilador de van der Pol com forçamento (RK4)

) 
$$\varepsilon = 0.3$$
,  $y(0) = 2$ ,  $v(0) = 0$ 





### Problema 4.3

Ode45 (espaço de fases)

#### Oscilador de van der Pol

