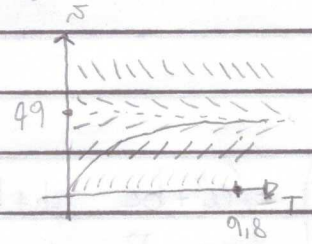
Capítulo 2

2.1) $\frac{dv}{dt} = g - \frac{\gamma}{m} v$

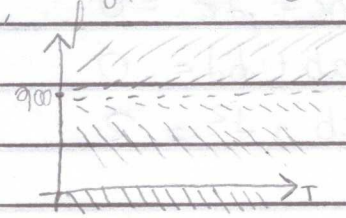
$m = 10\,Kg$
$\gamma = 2\,Kg/s$
$g = 9{,}8\,m/s^2$

$\frac{dv}{dt} = 9{,}8 - \frac{2}{10} v$

$\frac{dv}{dt} = 9{,}8 - \frac{1}{5} v = f(t, v)$



2.2) $\frac{df}{dt} = \frac{1}{2} f - 450 = f(t, f)$



2.3) $y' = f(t, y)$ Então $y = C \Leftrightarrow f(t, C) = 0 \; \forall t$

Se $y = C$ é a solução de $y' = f(t, y) \Rightarrow 0 = f(t, C) \; \forall t$

2.4) $\frac{dR}{dt} = 0{,}5R - 450$

$\frac{dv}{dt} = 9{,}8 - \frac{1}{5} v$

↳ Instável

$5 \frac{dv}{dt} = 900$

$\frac{dv}{dt}$

$y' = f(t, y) \Leftrightarrow f(t, C) = 0 \; \forall t$

↳ Estável

$5 \frac{dv}{dt} = 49$