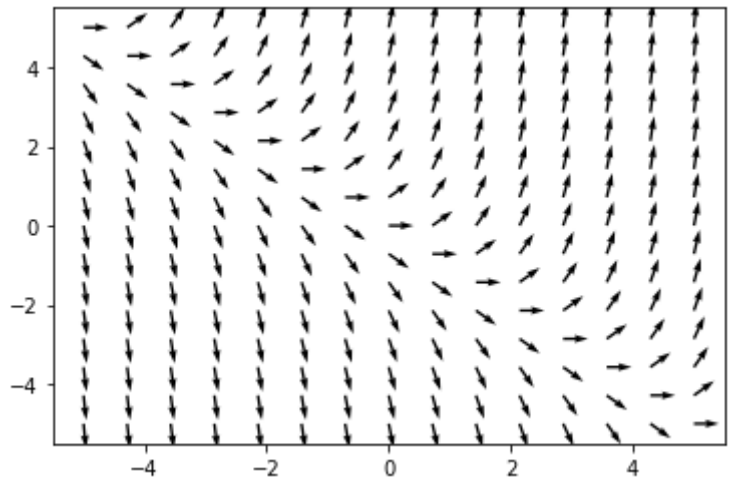
```
import numpy as np
from sympy import*
import matplotlib.pyplot as plt
```

Double-click (or enter) to edit

```
n = 15 # numero de pontos

y = np.linspace(-5,5,n)
t = np.linspace(-5,5,n)
Y,T = np.meshgrid(y,t)

# Y,T posicoes
#dy,dt Direcao da seta

f = y+T
angulo = np.arctan(f)
dy = np.cos(angulo)
dt = np.sin(angulo)

plt.quiver(Y,T,dy,dt)
```

```
<matplotlib.quiver.Quiver at 0x7f65bcaf0f90>
```



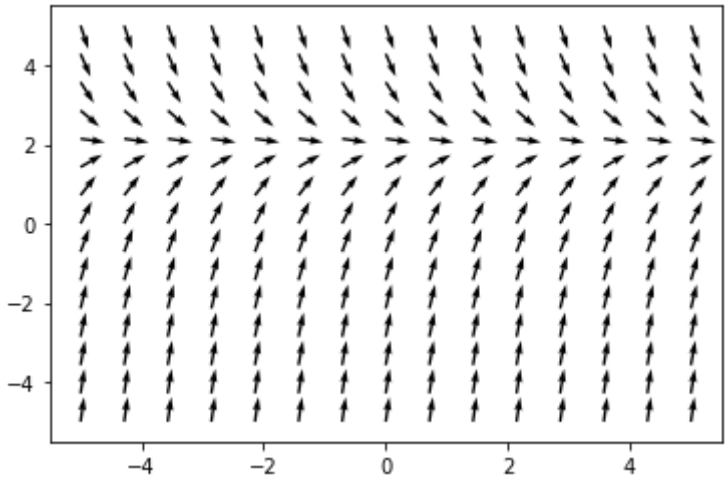
Ex 1 a

$$y' = 2 - y$$

```
n = 15

t = np.linspace(-5,5,n)
y = np.linspace(-5,5,n)
Y,T = np.meshgrid(y,t)
```

```
f = 2-Y
angulo = np.arctan(f)
dy = np.cos(angulo)
dt = np.sin(angulo)

plt.quiver(T,Y,dy,dt)
```

```
<matplotlib.quiver.Quiver at 0x7f65bcdcc3d0>
```



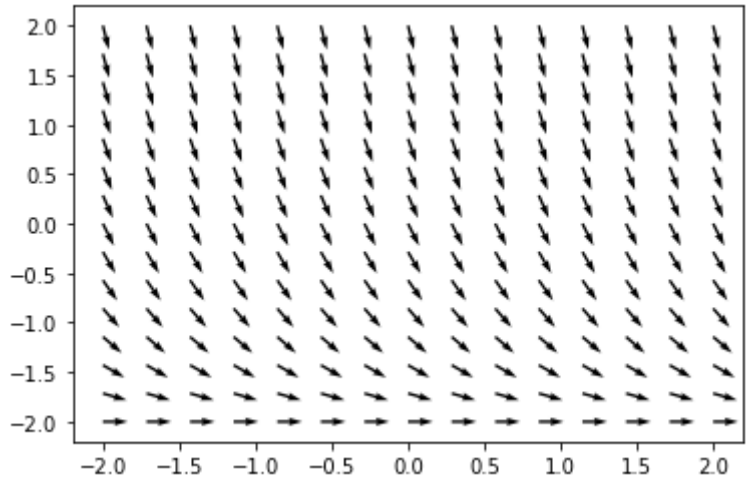

```
n = 15
y = np.linspace(-2,2,n)
t = np.linspace(-2,2,n)
T,Y = np.meshgrid(y,t)
```

```
f = Y-2
angulo = np.arctan(f)
dy = np.cos(angulo)
dt = np.sin(angulo)

plt.quiver(T,Y,dy,dt)
```

```
<matplotlib.quiver.Quiver at 0x7f65c216c5d0>
```

```
n = 15
y = np.linspace(-2,2,n)
t = np.linspace(-2,2,n)
T,Y = np.meshgrid(y,t)



f = -2-Y
angulo = np.arctan(f)
dy = np.cos(angulo)
dt = np.sin(angulo)

plt.quiver(T,Y,dy,dt)
```

```
<matplotlib.quiver.Quiver at 0x7f65bd189490>
```



Questao 3 a)

Yˆ2 - -Y Y(x) = cosx Y'(cosx) = 0 sen x Y" cos(x) = -cos(x)

Questao 3 b) Y"-Y =0 Y"= Y Y(x) = cos (hx) Y'cos(hx) = sen (hx) Y"cos(hx) = cos hx

Questao 3 c)

ty'= tˆ2 y'= (tˆ2+y)/ t y(t) = 3t +tˆ2 y'(3t +tˆ2) = 3t+2t

+ Code + Text