

① método de Euler é dado por

$$y_{i+1} = y_i + f(x_i, y_i)h \quad , \text{ onde } h \text{ é o passo}$$

Nesse caso, temos que

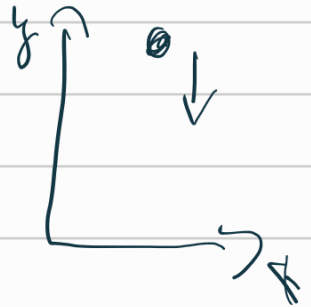
$$\frac{dv}{dt} = -g - \frac{b}{m}v^2$$

$$g = 9,8 \text{ m/s}^2$$

$$b = 0,1 \text{ Kg/m}$$

$$m = 1 \text{ Kg}$$

$$v(0) = 0$$



$$v_{i+1} = v_i + \left(-g - \frac{b}{m}v_i^2 \right) \Delta t$$

Ex:

$$\textcircled{1} \quad v_1 = v_0 + \left(-g - \frac{b}{m}v_0^2 \right) 0,1$$

$$v_1 = 0 + (-g - 0) \cdot 0,1$$

$$v_1 = -0,98 \text{ m/s}$$

$$\textcircled{11} \quad v_2 = v_1 + \left(-g - \frac{b}{m}v_1^2 \right) 0,1$$

$$v_2 = -0,98 + \left[-g - \frac{b}{m}(-0,98)^2 \right] 0,1$$

$$v_2 = -1,969604 \text{ m/s}$$

⋮

