$$\boxed{\vec{F}_v = -b\,\vec{v}}$$

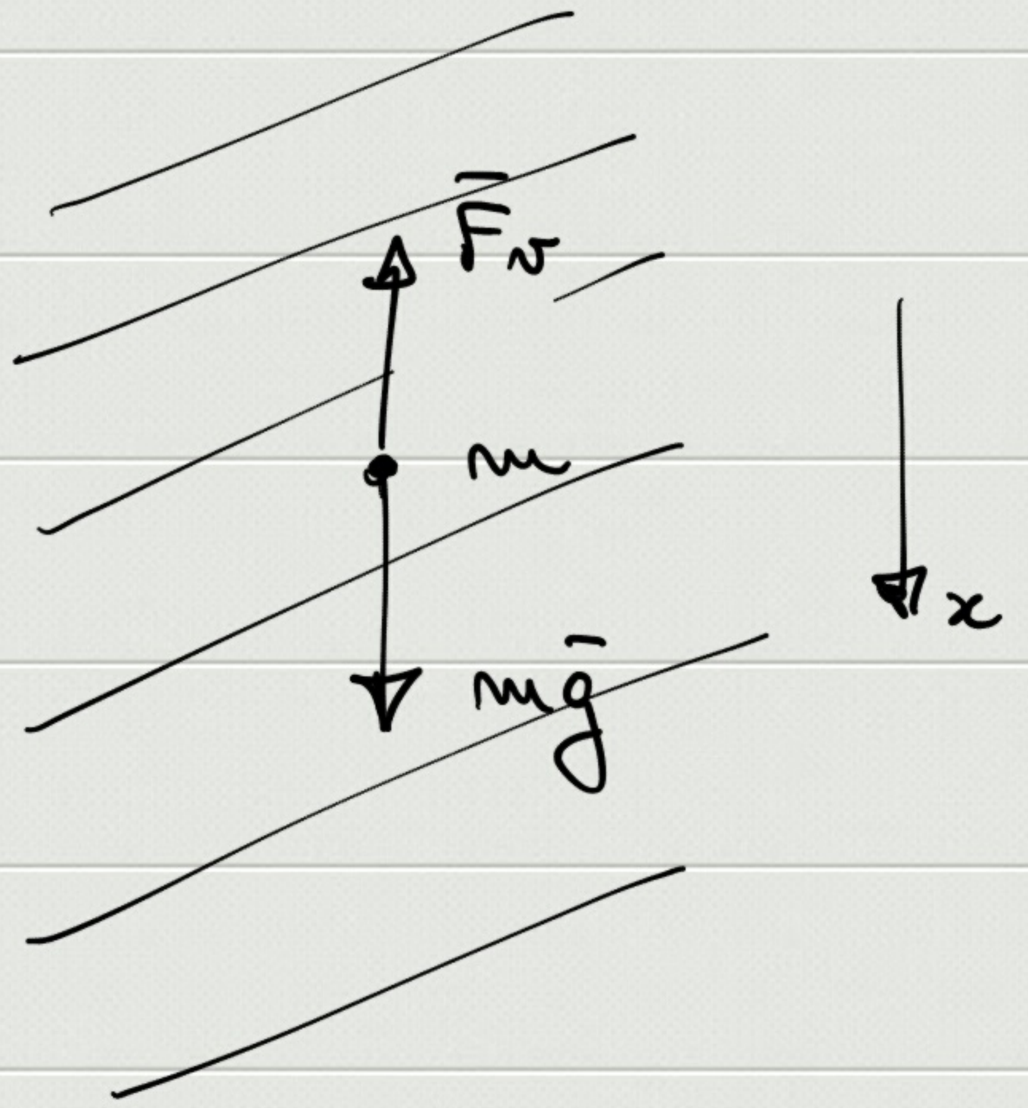
$$b > 0$$

$$[b] = \left[\frac{F}{v}\right] = \frac{kg\,m\,s^{-2}}{m\,s^{-1}} = kg/s$$

$$v = 0 \Rightarrow F_v = 0$$

$$F_v = -bv = ma \Rightarrow a = -\frac{b}{m}v = -kv$$

$$m\vec{g} + \vec{F}_v = m\vec{a}$$



$$mg - bv = ma = m\frac{dv}{dt}$$

$$\frac{m\,dv}{mg - bv} = dt$$

$$k = \frac{b}{m}$$

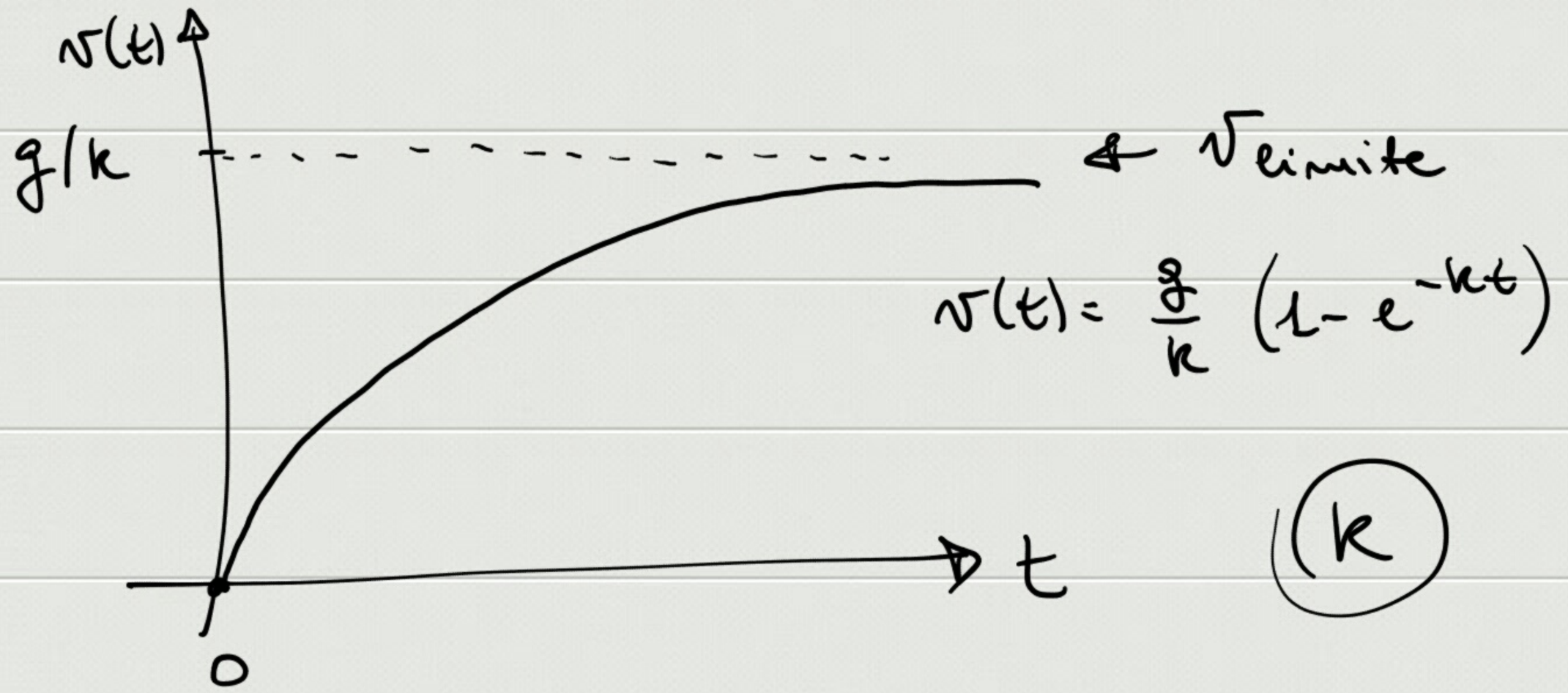
$$\Rightarrow \int_0^{v(t)} \frac{dv}{g - kv} = \int_0^t dt$$

$$v(t)$$

$$\Rightarrow -\frac{1}{k}\ln(g - kv)\Big|_0 = t$$

$$\ln\frac{g - kv(t)}{g} = -kt \Rightarrow g - kv(t) = g\,e^{-kt}$$

$$kv(t) = g\left(1 - e^{-kt}\right) \Rightarrow \boxed{v(t) = \frac{g}{k}\left(1 - e^{-kt}\right)}$$



$$v(t) = \frac{g}{k}\left(1 - e^{-kt}\right)$$

(k)

$$\bar{F}_v = -b\bar{v} = -c\eta\bar{v}$$

$\eta \rightarrow$ viscosità del fluido

$c \rightarrow$ coefficiente che dipende dalla forma

$$C = 6\pi R$$

sfera