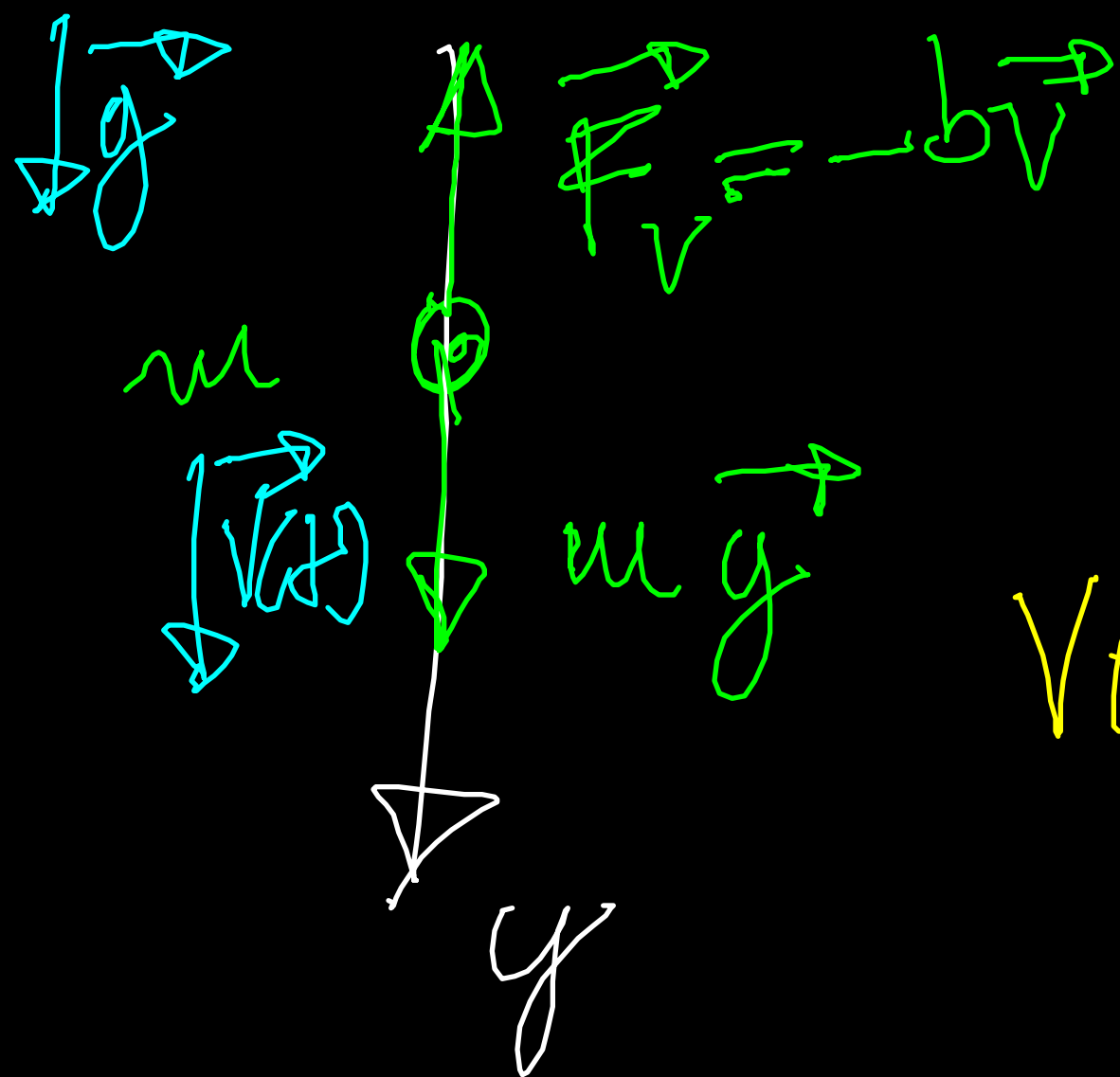


ATTRITO VISCOZO



$$V(t) = K' e^{-\frac{b}{m}t} + \frac{mg}{b}$$

$$m a_y = g - \frac{b}{m} v_y$$

$$\frac{dV(t)}{dt} = g - \frac{b}{m} V(t)$$

SOL. GEN. = SOL. PART. + SOL. OMOG.

SOL. PART.

(1)

OMOGENA ASSOCIATA

$$\int \frac{dV}{V} = \int -\frac{b}{m} dt + K$$

$$\ln V = \left(-\frac{b}{m} t + K \right) \Rightarrow V(t) = e^{-\frac{b}{m} t} e^K = K' e^{-\frac{b}{m} t}$$

$$V(t) = V_1 = \text{cost}$$

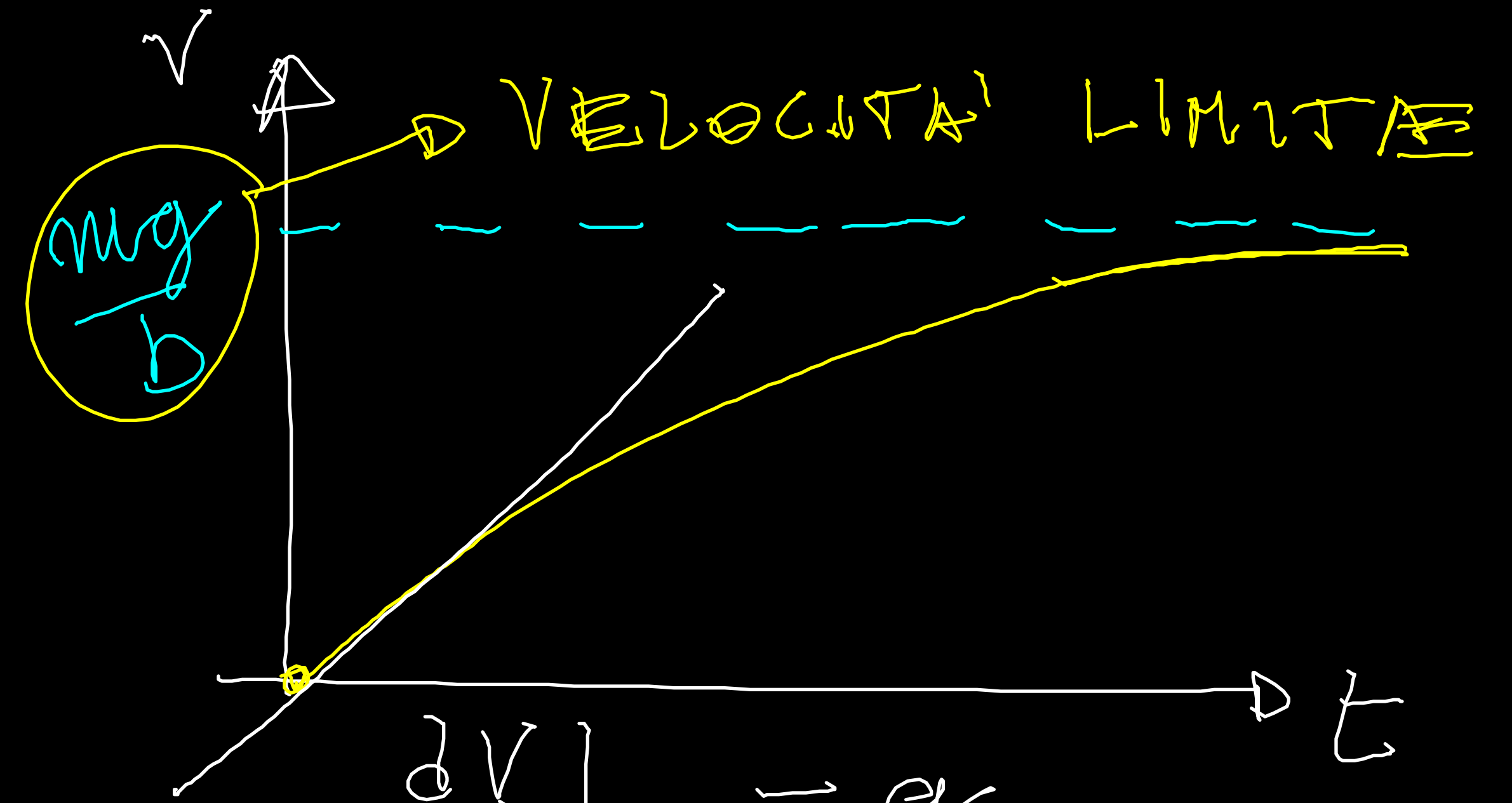
$$V_1 = \frac{mg}{b} \text{ SOL. PART.}$$

$$\frac{dV}{dt} = -\frac{b}{m} V \quad V = V(t)$$

$$\Rightarrow V(t) = K' e^{-\frac{b}{m} t}$$

SOL. GEN.

$$V(t) = K' e^{-\frac{b}{m}t} + \frac{mg}{b}$$



$V(0) = 0$

$$b = \frac{[K_y]}{[s]}$$

$$0 = K' + \frac{mg}{b}$$

$$\frac{mg}{b} = \frac{[K_y] [m]}{[K_y] [s]} = \frac{[m]}{[s]}$$

$$-\frac{mg}{b} = K'$$

$$V(t) = -\frac{mg}{b} e^{-\frac{b}{m}t} + \frac{mg}{b} = \frac{mg}{b} \left(1 - e^{-\frac{b}{m}t} \right)$$

