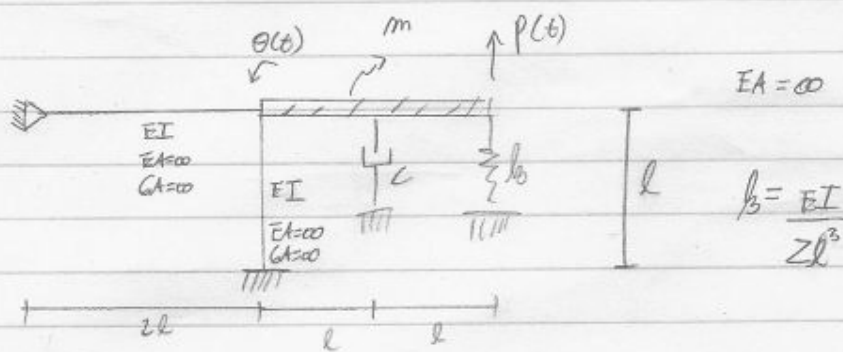


# Ejercicio 1 CIAZG

P2



$$\Rightarrow \tilde{h} = \frac{3EI}{2l} + \frac{4EI}{l} + b \cdot (2l)^2 = \left( \frac{3}{2} + 4 + 2 \right) \frac{EI}{l} = \frac{15}{2} \frac{EI}{l} \quad (0.5)$$

$$\tilde{c} = cl^2 \quad (0.5)$$

$$I = \frac{1}{3} m (2l)^2 = \frac{4}{3} ml^2 \quad (0.5)$$

$$\Rightarrow \frac{4}{3} ml^2 \ddot{\theta}(t) + cl^2 \dot{\theta}(t) + \frac{15}{2} \frac{EI}{l} \theta(t) = p(t) \cdot 2l$$

$$\Rightarrow \ddot{\theta}(t) + \frac{3}{4} \frac{c}{m} \dot{\theta}(t) + \frac{45}{8} \frac{EI}{ml^3} \theta(t) = \frac{3}{2ml} p(t) \quad \text{ec. de movimiento} \quad (0.5)$$

$$\Rightarrow \omega = \sqrt{\frac{b}{m}}, \quad T = \frac{2\pi}{\omega}, \quad \beta = \frac{c}{2m\omega}$$

$$\Rightarrow T = 2\pi \sqrt{\frac{8ml^3}{45EI}}, \quad \beta = \frac{3}{4} \frac{c}{m} \frac{1}{2} \cdot \sqrt{\frac{8ml^3}{45EI}} \quad (2.0)$$

$$\beta = \sqrt{\frac{c^2 l^3}{40mEI}} \quad (2.0)$$