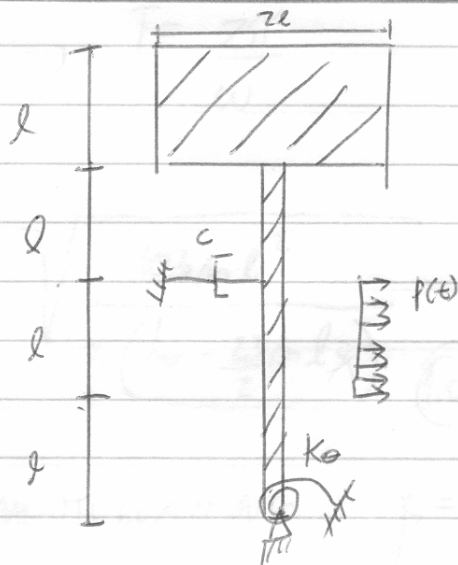
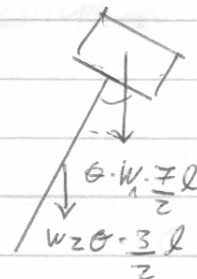


PAUTA Exercício 1 CI426

P1



$$m = \bar{m}l = 8l^2$$



$$I = \frac{1}{3} \bar{m} (3l)^3 + 8l^2 ((2l)^2 + l^2) + 8l^2 \left(\frac{7}{2}l\right)^2$$

$$I = 9ml^2 + \frac{5}{6}ml^2 + \frac{49}{2}ml^2 = \frac{103}{3}ml^2 \quad (1,0)$$

$$K = k_0 \quad (0,5) \quad F(t) = \frac{3l^2}{2} p(t) + 8\theta 2l^2 \cdot 8 \cdot \frac{7}{2}l + \theta \bar{m} \cdot 3l \cdot \frac{3}{2}l \cdot g$$

$$C = c(2l)^2 = 4cl^2 \quad (0,5) \quad \Rightarrow F(t) = \frac{3l^2}{2} p(t) + \frac{23}{2}ml\theta \cdot g \quad (1,0)$$

$$\Rightarrow \frac{103}{3}ml^2 \ddot{\theta}(t) + 4l^2c \dot{\theta}(t) + k_0 \theta(t) = \frac{3l^2}{2} p(t) + \frac{23}{2}mlg\theta(t)$$

$$\frac{103}{3}ml^2 \ddot{\theta}(t) + 4l^2c \dot{\theta}(t) + \left(k_0 - \frac{23}{2}mlg\right) \theta(t) = \frac{3l^2}{2} p(t)$$

$$\ddot{\theta}(t) + \frac{12}{103} \frac{c}{m} \dot{\theta}(t) + \frac{3}{103ml^2} \left(k_0 - \frac{23}{2}mlg\right) \theta(t) = \frac{9}{103m} p(t) \quad (1,0)$$

$$\Rightarrow w = \sqrt{\frac{k^*}{m^*}}, \quad T = \frac{2\pi}{w}$$

$$\Rightarrow T = 2\pi \sqrt{\frac{103 \text{ m} \cdot \ell^2}{3 \left(k_0 - \frac{23}{2} \text{ m} \cdot \ell^2 \right)}} \quad \text{período FUERTEMENTE}$$

° A partir de AMORTIGUAMIENTO $\beta = \frac{c}{c}$ $c = 2 \text{ mN}$

$$\Rightarrow \beta = \frac{12 c}{103 \text{ m}} \cdot \frac{1}{2} \sqrt{\frac{103 \text{ m} \cdot \ell^2}{3 \left(k_0 - \frac{23}{2} \text{ m} \cdot \ell^2 \right)}}$$

$$\beta = \sqrt{\frac{12 c^2 \ell^2}{103 \text{ m} \left(k_0 - \frac{23}{2} \text{ m} \cdot \ell^2 \right)}} \quad (10)$$