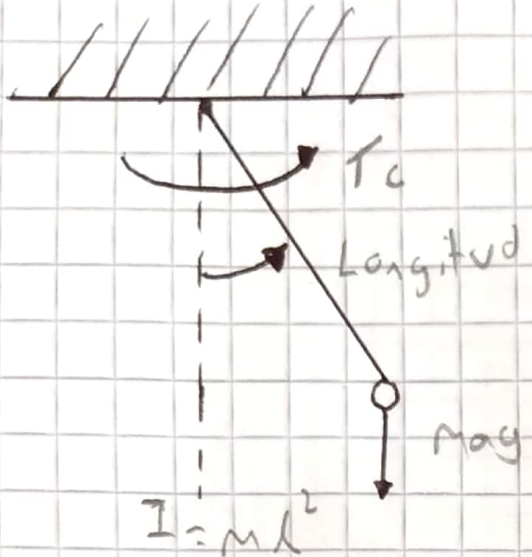
Tarea 4

Corte 2



$m = 1$
$L = 1$
$g = 9.8$

$$T_c = mgl \operatorname{sen}\theta = I\ddot{\theta}$$

$$\ddot{\theta} + \frac{g}{l}\operatorname{sen}\theta = \frac{T_c}{ml^2}$$

$$\ddot{\theta} = \frac{T_c}{ml^2} - \frac{g}{1}\operatorname{Sen}\theta$$

$$q_2 = \frac{T_c}{ml^2} - \frac{g}{l}\operatorname{Sen} q_1$$

$q_1 = \theta_1$

$q_2 = \dot{q}_1 = \dot{\theta}_1$

$q_3 = \dot{q}_2 = \ddot{q}_1 = \ddot{\theta}_1$

$$\begin{bmatrix} q_1 \\ q_2 \end{bmatrix} = \begin{bmatrix} 0 & 1 \\ \frac{-g\operatorname{sen}\theta}{l} & 0 \end{bmatrix} \begin{bmatrix} q_1 \\ q_2 \end{bmatrix} + \begin{bmatrix} 0 \\ \frac{1}{ml^2} \end{bmatrix} T_c$$

$$[q_1] = \begin{bmatrix} 1 & 0 \end{bmatrix} \begin{bmatrix} q_1 \\ q_2 \end{bmatrix}$$