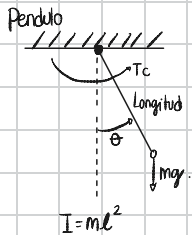


Tarea #3



$$T_c - mg \cos \theta = I \ddot{\theta}$$

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

$$\ddot{\theta} = \frac{T_c}{ml^2} - \frac{g}{l} \sin \theta$$

$$q_1' = \frac{T_c}{ml^2} - \frac{g}{l} \sin q_1$$

$$q_1 = \theta$$

$$q_2 = q_1 - \dot{\theta}$$

$$q_2' = q_1' - \ddot{\theta}$$

libro 2.15.

$$m = 1$$

$$L = 1$$

$$g = 9.8$$

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

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