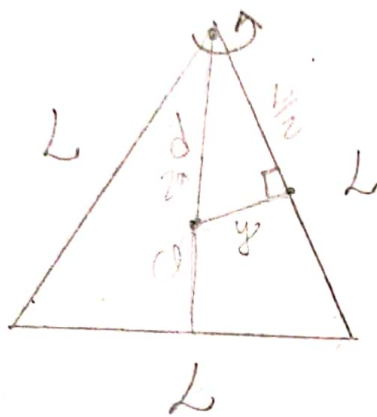


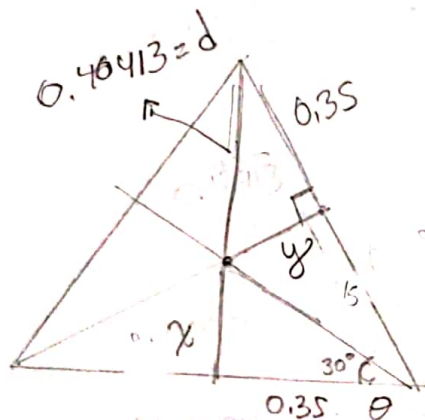
①



$$T = ? \quad \omega = ?$$

$$L = 70 \text{ cm} = 0.7 \text{ m}$$

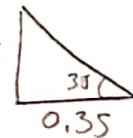
$$\theta = 15^\circ$$



Encontrando d

$$\sin \theta = \frac{CA}{HA} = \frac{y}{A}$$

$$\tan \theta = \frac{y}{A}$$



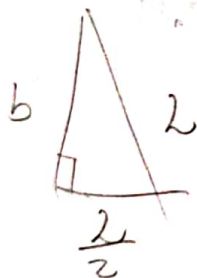
$$\tan(30)(0.35) = y$$

$$y = 0.202072 \text{ mts}$$

$$d = b - y$$

$$d = 0.6062 - 0.202072$$

$$d = 0.404128 \text{ mts}$$



$$b = \sqrt{(0.7)^2 - (0.35)^2}$$

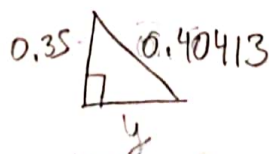
$$b = 0.60621 \text{ mts}$$

Momento de Inercia  
I vara.

$$I = \frac{1}{12} m (0.7)^2 + m (0.20204)^2$$

$$I = \frac{49}{1200} \text{ m} + 0.01082 \text{ m}$$

$$I = 0.0816534 \text{ m} [\text{kg} \cdot \text{m}^2]$$



$$y = \sqrt{(0.40413)^2 - (0.35)^2}$$

$$y = 0.20204$$

Momento de Inercia en el centro de masa.

$$I = (3) (0.0816534 \text{ m})$$

$$I = 0.24496 \text{ m} [\text{kg} \cdot \text{m}^2]$$

Momento de Inercia con respecto al pivote.

$$I_0 = 0,24496 \text{ m} + 3 \text{ m} (0,40413)^2$$

$$I_0 = 0,734923 \text{ m} \quad [\text{kg} \cdot \text{m}^2]$$

Periodo.

$$T = 2\pi \sqrt{\frac{I}{mgd}}$$

$$T = 2\pi \sqrt{\frac{0,734923 \text{ m}}{(3 \text{ m})(9,8)(0,40413)}}$$

$$T = 1,562 \quad [\text{s}]$$

Rapidez Angular

$$\omega = \sqrt{\frac{mgd}{I}} = \sqrt{\frac{(3 \text{ m})(9,8)(0,40413)}{0,734923 \text{ m}}}$$

$$\omega = 4,0208075 \quad \left[\frac{\text{rad}}{\text{s}}\right]$$

$$\dot{\omega} = -\left(15 \times \frac{\pi}{180^\circ}\right) (4,0208) \sin(15^\circ + 0) \quad ^1$$

$$\dot{\omega} = 1,05454 \quad \left[\frac{\text{rad}}{\text{s}^2}\right]$$