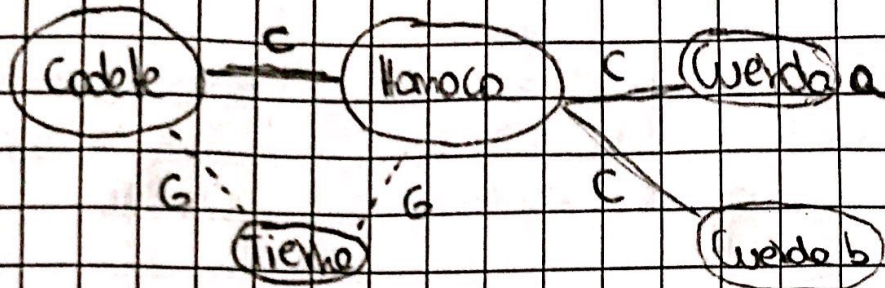


Pregunta N°1

a) D.I.



I.F.

b) Codek:

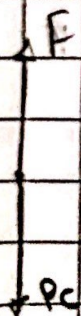
$$\begin{aligned} \vec{F}_{\text{Homero} \rightarrow \text{Codek}} &= \vec{F} \\ \vec{F}_{\text{Tieyo} \rightarrow \text{Codek}} &= \vec{P}_C \end{aligned}$$

I.F.

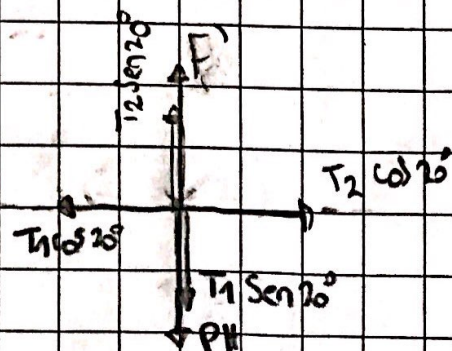
Homero:

$$\begin{aligned} \vec{F}_{\text{Codek} \rightarrow \text{Homero}} &= \vec{F} \\ \vec{F}_{\text{Cuerda a} \rightarrow \text{Homero}} &= \vec{T}_1 \\ \vec{F}_{\text{Cuerda b} \rightarrow \text{Homero}} &= \vec{T}_2 \\ \vec{F}_{\text{Tieyo} \rightarrow \text{Homero}} &= \vec{P}_H \end{aligned}$$

c) D.C.L.C.



D.C.L.H.



Prueba N° 2
Código Político Q002 Ascencio

✓

d)

Eje y

$$F + T_2 \sin 25^\circ = P_H + T_1 \sin 20^\circ$$

$$70 \text{ kg} + T_2 \sin 20^\circ = 10 \text{ kg} + T_1 \sin 20^\circ$$

$$70 \text{ kg} + T_1 \sin 20^\circ = 10 \text{ kg} + T_1 \sin 20^\circ$$

Eje x

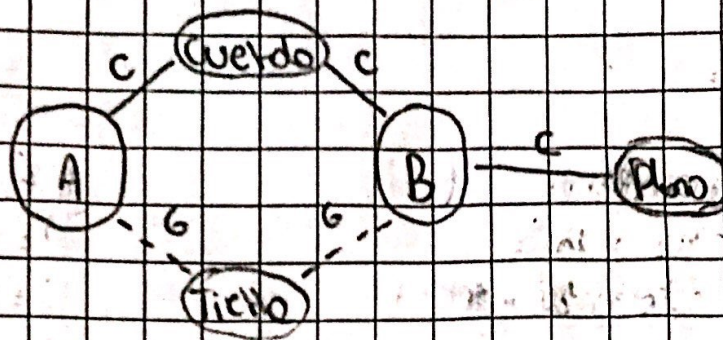
$$T_1 \cos 25^\circ = T_2 \cos 20^\circ$$

$$T_1 = T_2 \cos 20^\circ / \cos 25^\circ$$

$$T_1 = T_2$$

Pregunta N°2

a) D.I.



I.F.

A:

$$F_{C \rightarrow A} : T$$

$$F_{I \rightarrow A} : P_0$$

I.F.

B:

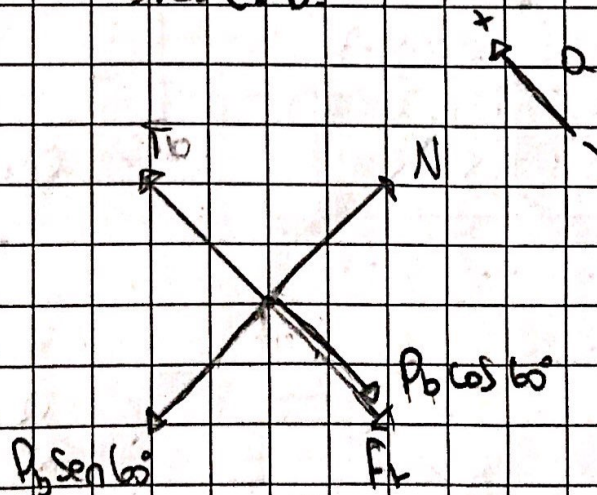
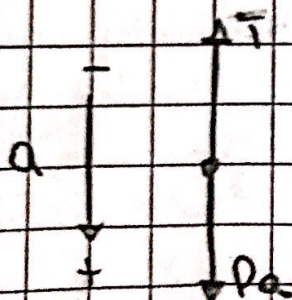
$$F_{C \rightarrow B} : T$$

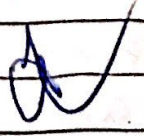
$$F_{P \rightarrow B} : P_0$$

$$F_{T \rightarrow B} : P_0$$

b) D.C.L.A

D.C.L.B





(A)

c) Eje y

$$\sum F_y = m \cdot a$$

$$P_0 - T_0 = m \cdot a$$

$$150 - T_0 = 15 \cdot a$$

$$\frac{150 - T}{15} = a$$

$$\frac{T - 49,02}{15} = \frac{150 - T}{15}$$

$$15(T - 49,02) = 15(150 - T)$$

$$15T - 735,3 = 2250 - 15T$$

$$15T + 15T = 2250 + 735,3$$

$$30T = 2985,3$$

$$T = 2985,3 / 30$$

$$T = 99,51$$

(B)

Eje y

$$\sum F_y = 0$$

$$N = P_0 \sin 60^\circ$$

$$N = 150 \cdot \sin 60^\circ$$

$$N = 129,9$$

Eje x

$$\sum F_x = m \cdot a$$

$$T - P_0 \cos 60^\circ - F_r = m \cdot a$$

$$T - 150 \cdot \cos 60^\circ - (\mu \cdot N) = 15 \text{ kg} \cdot a$$

$$T - 75 - (0,2 \cdot 129,9) = 15 \text{ kg} \cdot a$$

$$T - 75 - 25,98 = 15 \cdot a$$

$$T - 49,02 = 15 \cdot a$$

$$\frac{T - 49,02}{15} = a$$

$$a = \frac{99,51 - 49,02}{15}$$

$$a = 3,366 \text{ (m/s}^2\text{)}$$

$$a = 3,37 \text{ (m/s}^2\text{)} //$$

Prueba N°2

Codele Patricia Oros Alencio



Pregunta N°3

$$R_1 = 0,1 \text{ (m)}$$

$$R_2 = 0,2 \text{ (m)}$$

$$R_3 = 0,05 \text{ (m)}$$

$$\omega_1 = 0 \text{ (rad/s)}$$

$$\omega_f = 800 \text{ (Rev/min)}$$

$$= \frac{800 \pi}{3} \text{ (rad/s)}$$

$$a) \quad 800 \left[\frac{\text{Rev}}{\text{min}} \right] \cdot \frac{2\pi}{1 \text{ Rev}} \cdot \frac{1 \text{ min}}{60 \text{ s}} = \frac{800 \pi}{3} \text{ (rad/s)}$$

$$= 83,78 \text{ (rad/s)}$$

$$\omega_3 = 83,8 \text{ (rad/s)} //$$

$$b) \quad V_3 = \omega_3 \cdot R_3$$

$$V_3 = 83,8 \text{ (rad/s)} \cdot 0,05 \text{ (m)}$$

$$V_3 = 4,19$$

$$V_2 = \omega_2 \cdot R_2$$

$$4,19 = \omega_2 \cdot 0,2 \text{ (m)}$$

$$\frac{4,19}{0,2} = \omega_2$$

$$V_3 = V_2$$

$$\omega_2 = 20,95 \text{ (rad/s)} //$$

$$= 21$$

$$\omega_1 = \omega_2$$

$$c) \quad V_1 = \omega_1 \cdot R_1$$

$$V_1 = 21 \text{ (rad/s)} \cdot 0,1 \text{ (m)}$$

$$V_1 = 2,1 //$$

$$d) \quad \omega = 800 \text{ (Rev/min)}$$