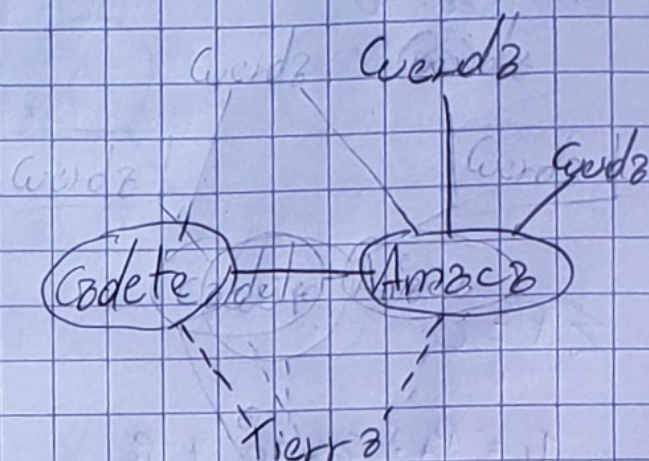
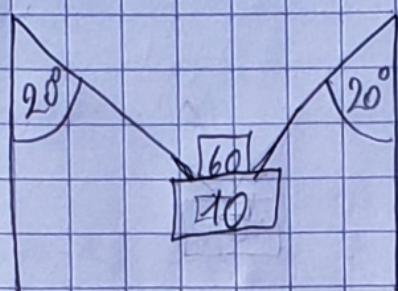


Problema 1

Prueba de Física cadete FM Galvez
2° Medio



I. F. cadete

I. F. amacá

$$F_{c_{amacá-cadete}} : F_r$$

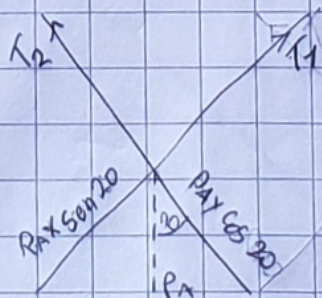
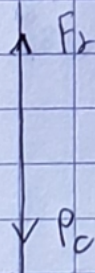
$$F_{c_{cuerda-amacá}} : T_1$$

$$F_{g_{tierra-cadete}} : P_c$$

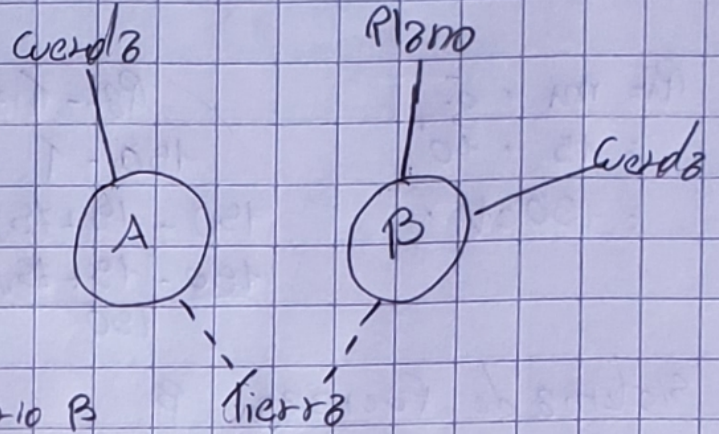
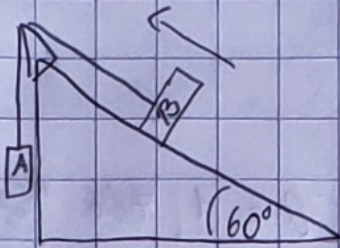
$$F_{c_{cuerda-amacá}} : T_2$$

$$F_{g_{tierra-amacá}} : P_2$$

$$F_{c_{cadete-amacá}} : F$$



Problema 2



Inventario A

Inventario B

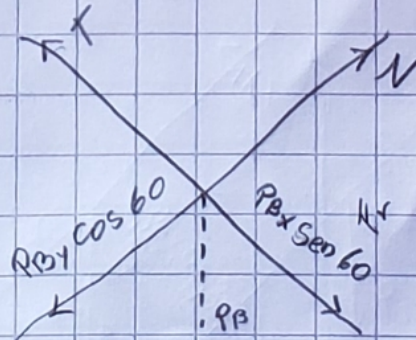
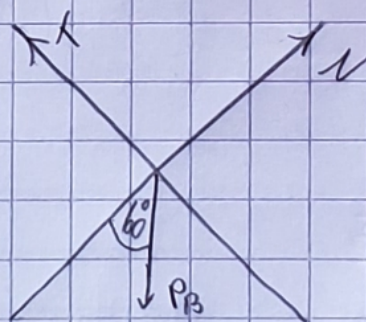
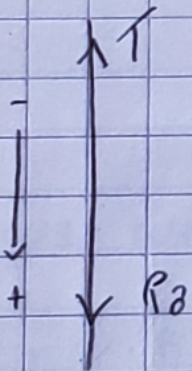
$$F_{cuerda-A} : T$$

$$F_{Tierra-A} : P_A$$

$$F_{cuerda-B} : T$$

$$F_{Plano-B} : N$$

$$F_{Tierra-B} : P_B$$



Byron Galva

Sistema de Fuerzas A

$$\sum \vec{F} = m \cdot a$$

$$\begin{aligned} P_A &= m_A \cdot g \\ &= 15 \cdot 10 \\ &= 150 \text{ N} \end{aligned}$$

$$\begin{aligned} P_B - T &= m_B \cdot a \\ 150 - T &= 150 \cdot a \\ 150 - 15 + 75\sqrt{3} &= 150 \cdot a \\ \frac{150 - 15 + 75\sqrt{3}}{150} &= a \end{aligned}$$

$$a = 1,766 \text{ m/s}^2$$

Sistema de Fuerzas B

$$\begin{aligned} N &= P_{By} \cdot \cos 60 \\ &= m_B \cdot g \cdot \cos 60 \\ &= 15 \cdot 10 \cdot \cos 60 \\ &= 150 \cdot \cos 60 \\ &= 75 \text{ [N]} \end{aligned}$$

$$\begin{aligned} T &= P_{Bx} \cdot \sin 60 + F_r \\ &= m_B \cdot g \cdot \sin 60 + \mu \cdot N \\ &= 150 \cdot \sin 60 + 0,2 \cdot 75 \\ &= 15 + 75\sqrt{3} \end{aligned}$$

$$T = m_B \cdot a$$

$$15 + 75\sqrt{3} = 150 \cdot a$$

$$a = \frac{15 + 75\sqrt{3}}{150}$$

$$a = \frac{20 + \sqrt{3}}{2}$$

Baylen Galvez

Baylen Galvez

Problem 3

$$a) 800 \text{ rpm} \cdot \frac{2\pi}{1 \text{ rev}} \cdot \frac{1 \text{ min}}{60 \text{ s}} = 26,7 \pi \frac{\text{rad}}{\text{s}}$$
$$= 83,7 \frac{\text{rad}}{\text{s}}$$

$$b) v_m = v_2$$

$$\omega_m \cdot R_m = \omega_2 \cdot R_2 = 83,7 \cdot 0,05 = 4,18$$

$$4,18 = \omega_2 \cdot R_2 = 4,18 = \omega_2 \cdot 0,2$$

$$c) \omega_2 = \frac{4,18}{0,2}$$

$$= 20,9 \frac{\text{rad}}{\text{s}} \approx 21 \frac{\text{rad}}{\text{s}}$$

$$c) \omega_2 = \omega_1$$

$$v = \omega \cdot R$$

$$v = 21 \cdot 0,1$$

$$= 2,1 \text{ m/s}$$

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Prof. Dr. J. J. J.

d) $d = \theta \cdot R$

$$0,8 = \theta \cdot 0,1$$

$$\theta = \frac{0,8}{0,1}$$

$$\theta = 8 \text{ rad}$$

$$2\pi \rightarrow 360$$

$$8 \rightarrow x$$

$$x = 1440 \text{ vueltas}$$