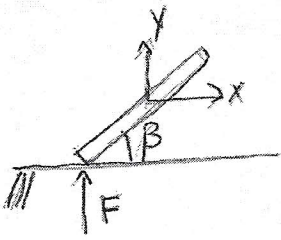


Lista 2.

1)



$$I_{\text{linear}} = G_2 - G_1$$

$$I_{\text{ang}} = H_2 - H_1$$

$$I_{\text{linear}} = \int F dt = G_2 - G_1 = m V_2^* - m V_1^*$$

$$I_{\text{ang}} = \int (F_1 l \cos \beta dt) = I^* \omega_2 - I^* \omega_1 \rightarrow 0$$

$$\int F dt = - \frac{I^* \omega_2}{l \cos \beta} = m (V_2^* - V_1^*)$$

$$- \frac{I^* \omega_2}{l \cos \beta} = m (V_2^* - V_1^*)$$

Considerando o eixo de rotaçao elastico: $E_1 = E_2$.

$$\frac{1}{2} m V_1^{*2} = \frac{1}{2} I^* \omega_2^2 + \frac{1}{2} m V_2^{*2} \Rightarrow I^* \omega_2^2 = m (V_1^{*2} - V_2^{*2})$$

$$\boxed{m V_2^* - V_1^* = \frac{I^* \omega_2}{m l \cos \beta}} \Rightarrow R V_1^* + R V_2^* = \omega_2 l \cos \beta$$

$$\begin{cases} R V_1^* - R V_2^* = \frac{I^* \omega_2}{m l \cos \beta} \\ R V_1^* + R V_2^* = \omega_2 l \cos \beta \end{cases}$$

$$\omega_2 = \frac{G \cos \beta R V_1^*}{l + 3 l \cos^2 \beta}$$

$$R V_2^* = \frac{G l \cos^2 \beta R V_1^* - R V_1^*}{l + 3 l \cos^2 \beta}$$

