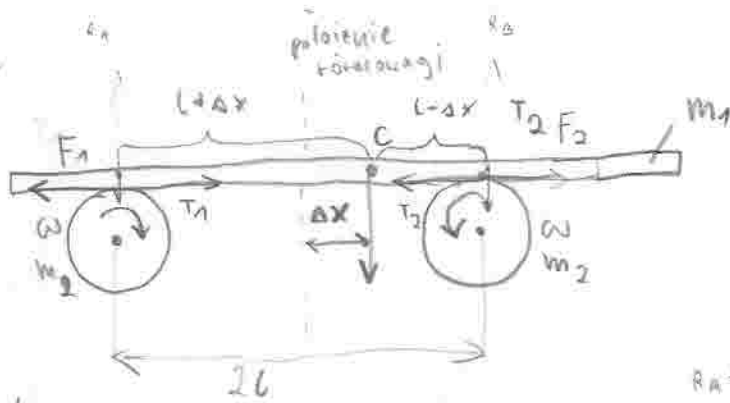


$$F_{\text{ad}} = \frac{m \cdot v^2}{r} \quad a_{\text{ad}} = \omega^2 \cdot r \quad \vec{a}_{\text{ad}} = -\omega^2 \cdot \vec{r}$$

$$F_{\text{ad}} = m \cdot \omega^2 \cdot r$$

$$I = \frac{1}{2} m_2 r^2$$



$$P_n = m_n \cdot g$$

$$R_A + R_B = P_n = 0$$

$$P_n \cdot (l + \Delta x) - R_B \cdot 2l = 0$$

$$R_B = P_n \cdot \frac{(l + \Delta x)}{2l} + (l + \Delta x) \cdot \omega^2 \cdot r^2$$

$$R_A + P_n \cdot \frac{(l + \Delta x)}{2l} - P_n = 0$$

$$R_A = P_n \left( 1 - \frac{l + \Delta x}{2l} \right)$$

$$R_A = P_n \cdot \left( \frac{2l - (l + \Delta x)}{2l} \right)$$

$$R_A = P_n \cdot \left( \frac{2l - l - \Delta x}{2l} \right)$$

$$R_A = P_n \cdot \frac{l - \Delta x}{2l}$$

sprawdzenie

$$m_n \cdot g = m_n \cdot g \cdot \frac{l - \Delta x}{2l} + m_n \cdot g \cdot \frac{l + \Delta x}{2l}$$

$$1 = \frac{l - \Delta x}{2l} + \frac{l + \Delta x}{2l}$$

$$1 = \frac{l - \Delta x + l + \Delta x}{2l} = \frac{2l}{2l} = 1$$

$$\omega = 2\pi \cdot f \quad f = \frac{1}{T}$$

$$\omega = \frac{2\pi}{T} \rightarrow T = \frac{2\pi}{\omega}$$

$$T^2 = \frac{4\pi^2}{\omega^2}$$

$$T_1 = m_1 \cdot g \cdot \frac{l - \Delta x}{2l} \cdot t$$

$$T_2 = m_1 \cdot g \cdot \frac{l + \Delta x}{2l} \cdot t$$

$$\vec{F}_c = \vec{F}_1 + \vec{F}_2$$

~~F<sub>W</sub>~~

$$\vec{T}_W = T_2 - T_1$$

$$T_W = m_1 \cdot g \cdot \frac{l + \Delta x}{2l} \cdot t - \left( m_1 \cdot g \cdot \frac{l - \Delta x}{2l} \right)$$

$$\vec{T}_W = m_1 \cdot g \cdot t \cdot \left( \frac{l + \Delta x - l + \Delta x}{2l} \right)$$

$$T_W = m_1 \cdot g \cdot t \cdot \frac{2\Delta x}{2l}$$

$$T_W = m_1 \cdot g \cdot t \cdot \frac{\Delta x}{l}$$

$$\vec{F}_H = -k \cdot \vec{x}$$

$$T_W = \frac{m_1 \cdot g \cdot t}{l} \cdot \Delta x$$

$$F_H = -\frac{m_1 \cdot g \cdot t}{l} \cdot \Delta x$$

$$F_H = -k \cdot \Delta x$$

$$\frac{k}{m} = \omega^2$$

$$\frac{m_1 \cdot g \cdot t}{l} = \frac{1}{m_1} \cdot \omega^2$$

$$\omega^2 = \frac{g \cdot t}{l}$$

$$T = 2\pi \cdot \sqrt{\frac{l}{g \cdot t}}$$

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