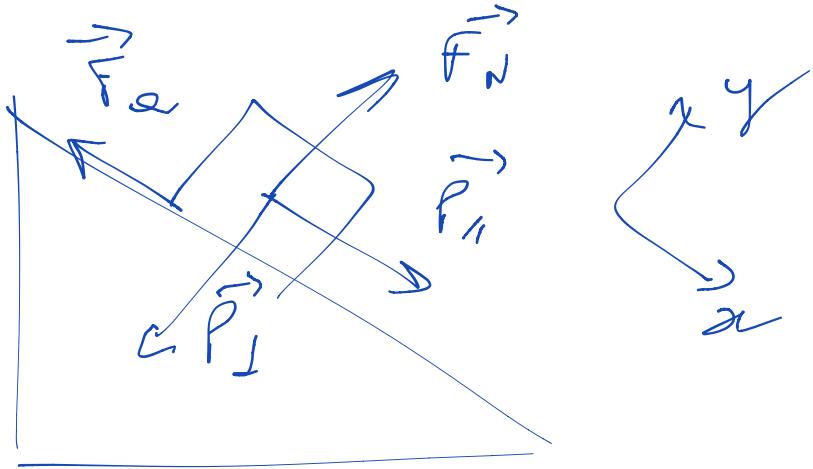


Lungo x : $P_{\parallel} = \max$

Lungo y : $F_N - P_{\perp} = 0$

$$\begin{cases} mg \sin \alpha = \max \\ F_N = mg \cos \alpha \end{cases}$$

$$a = g \sin \alpha$$

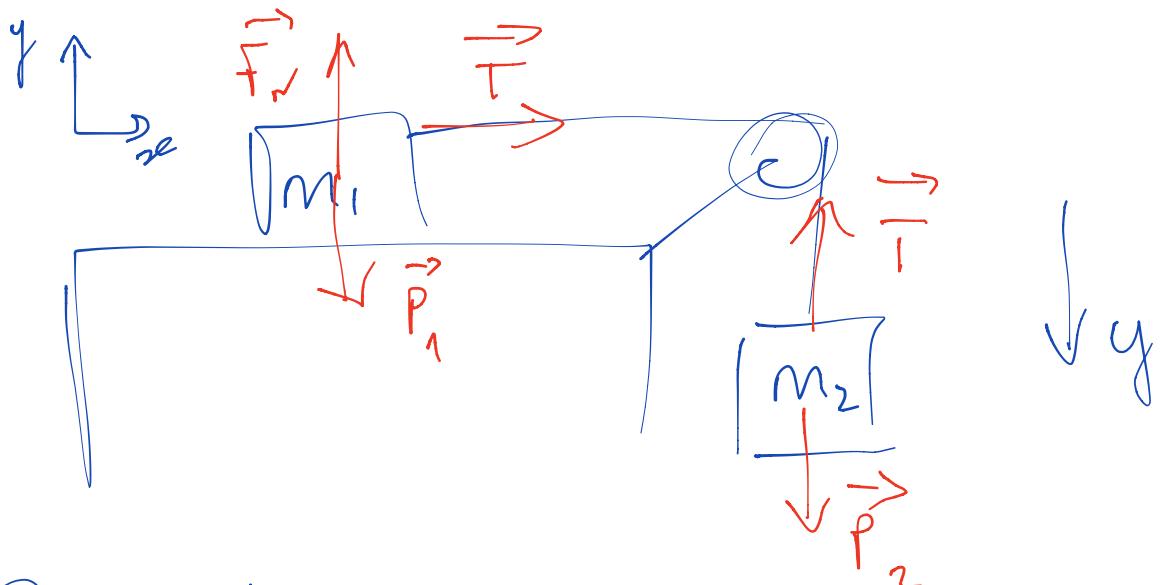


$$\begin{cases} P_{\parallel} - F_a = m\alpha \\ F_N - P_{\perp} = 0 \end{cases}$$

$$\begin{cases} mg \sin \alpha - \mu F_N = m\alpha \\ F_N = mg \cos \alpha \end{cases}$$

$$mg \sin \alpha - \mu mg \cos \alpha = m\alpha$$

$$\alpha = g \sin \alpha - \mu g \cos \alpha$$



Caso 1

$$\begin{cases} T = m_1 \alpha_1 \\ F_N - P_1 = 0 \end{cases}$$

Caso 2

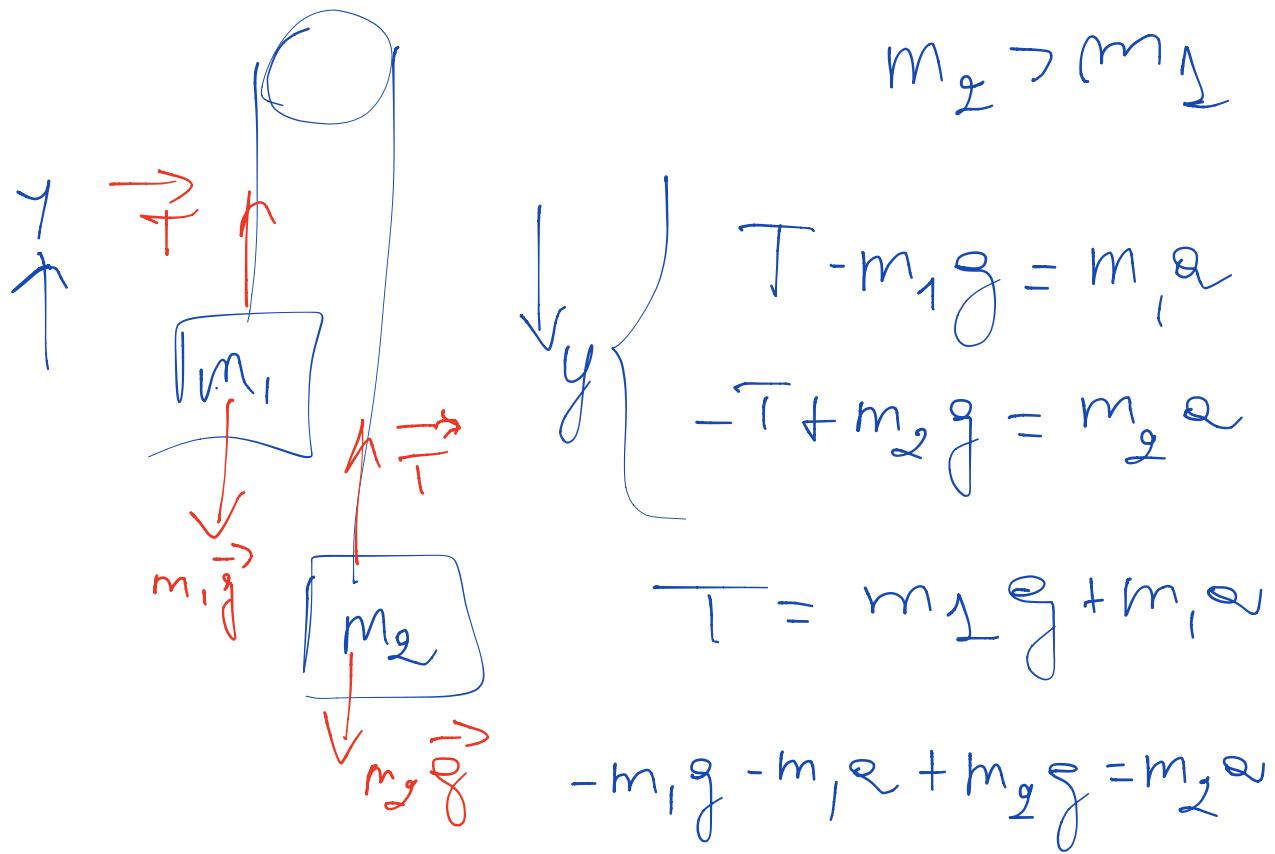
$$\begin{aligned} P_2 - T &= m_2 \alpha_2 \\ \alpha_1 &= \alpha_2 = \alpha \end{aligned}$$

$$\begin{cases} T = m_1 \alpha \\ F_N = m_1 g \end{cases} \quad m_2 g - T = m_2 \alpha$$

$$m_2 g - m_1 \alpha = m_2 \alpha$$

$$\alpha = \frac{m_2 g}{m_1 + m_2}$$

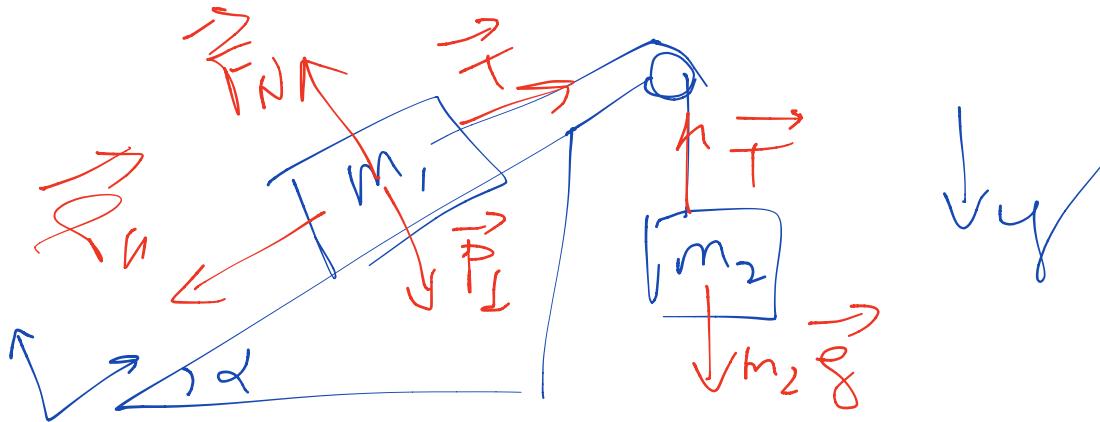
$$T = \frac{m_1 m_2 g}{m_1 + m_2}$$



$$\alpha = \frac{(m_2 - m_1)g}{m_1 + m_2}$$

$$\begin{aligned}
T &= m_1 g + m_1 \alpha = \\
&= m_1 g + m_1 \frac{(m_2 - m_1)g}{m_1 + m_2} = \\
&= \frac{m_1^2 g + m_2 m_1 g + m_1 m_2 g - m_1^2 g}{m_1 + m_2}
\end{aligned}$$

$$T = \frac{2m_1 m_2 f}{m_1 + m_2}$$



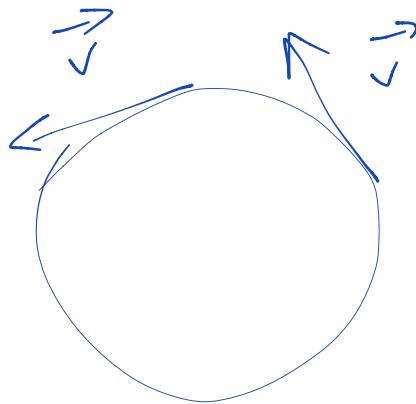
$$\left\{ \begin{array}{l} T - m_1 g \sin \alpha = m_1 \alpha \\ F_N = m_1 g \cos \alpha \\ m_2 g - T = m_2 \alpha \end{array} \right.$$

$$\left\{ \begin{array}{l} T = m_2 g - m_2 \alpha \\ m_2 g - m_2 \alpha - m_1 g \sin \alpha = m_1 \alpha \end{array} \right.$$

$$\alpha = \frac{m_2 g - m_1 g \sin \alpha}{m_1 + m_2} =$$

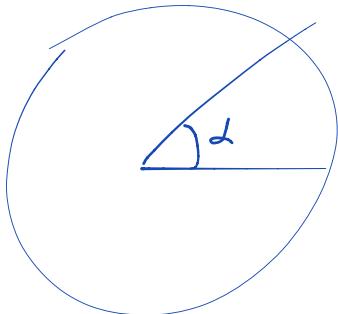
$$= \frac{(m_2 - m_1 \sin(\alpha)) g}{m_1 + m_2}$$

Circolare



$$v = \frac{\Delta s}{\Delta t} = \frac{2\pi R}{T}$$

$$v = 2\pi R \cdot \frac{1}{T} = 2\pi R f$$



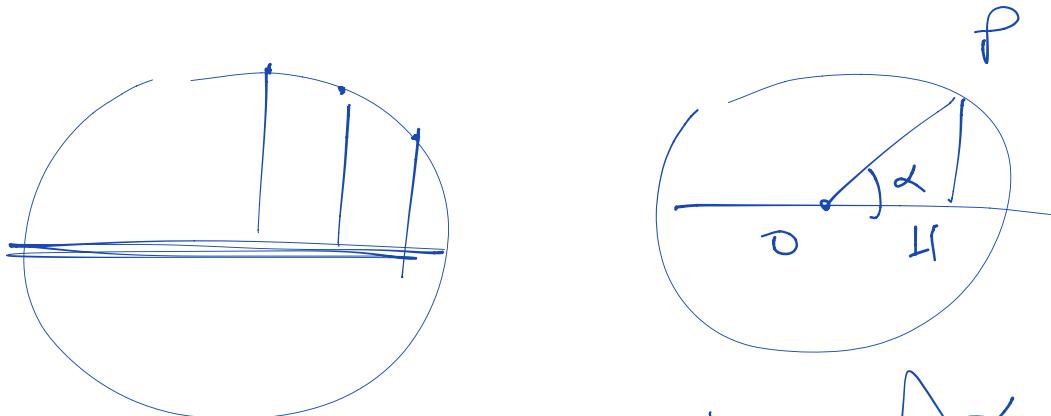
$$\omega = \frac{\Delta \alpha}{\Delta t} = \frac{2\pi}{T}$$

$$\omega = 2\pi f$$

$$v = (2\pi R f) = \omega R$$

$$\alpha_c = \frac{v^2}{R} = \frac{(2\pi R f)^2}{R} = \\ = 4\pi^2 f^2 R$$

Amnico



$$\omega = \frac{\Delta\alpha}{\Delta t} = \frac{\alpha - \alpha_0}{t - t_0}$$

$$\alpha = \omega t$$

$$\overline{OH} = \overline{OP} \cos \alpha = \overline{OP} \cos \omega t$$

$$x = R \cos \omega t$$

$$Q = -\omega^2 R$$