

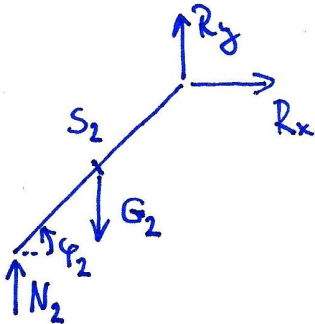
Dáno:

$$m_2, m_3, I_{2S_2}, I_{3S_3}$$

$$a, b, l_2$$

$$F (F)$$

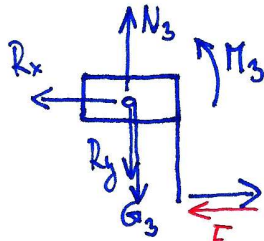
Úkol: Sestavte N-E rovnice



$$m_2 \ddot{x}_{S_2} = R_x \quad (1)$$

$$m_2 \ddot{y}_{S_2} = R_y - G_2 + N_2 \quad (2)$$

$$I_{2S_2} \ddot{\varphi}_2 = R_y \cdot \frac{l_2}{2} \cos \varphi_2 - N_2 \cdot \frac{l_2}{2} \cos \varphi_2 - R_x \cdot \frac{l_2}{2} \sin \varphi_2 \quad (3)$$



$$m_3 \ddot{x}_{S_3} = \overset{(-F)}{F} - R_x \quad (4)$$

$$(\emptyset) m_3 \ddot{y}_{S_3} = N_3 - R_y - G_3 \quad (5)$$

$$(\emptyset) I_{3S_3} \ddot{\varphi}_3 = F \cdot a + M_3 \quad (6)$$

$(-F \cdot a)$

Pokud se "2" dotýká podložky: $\ddot{\varphi}_2 = \emptyset, \ddot{y}_{S_2} = \emptyset, \ddot{x}_{S_2} = \ddot{x}_{S_3}$

Odtřzení by nastalo pokud vyjde $N_2 < \emptyset$

$$(4) \rightarrow R_x = \overset{(-F)}{F} - m_3 \ddot{x}_{S_3}$$

$$(1) \rightarrow R_x = m_2 \ddot{x}_{S_2}$$

$$(2) \rightarrow R_y = G_2 - N_2$$

$$\rightarrow F = (m_3 + m_2) \ddot{x}_{S_3}$$

$(F = -(m_3 + m_2) \ddot{x}_{S_3})$

$$(3) \rightarrow \emptyset = (G_2 - N_2) \cdot \frac{l_2}{2} \cos \varphi_2 - N_2 \cdot \frac{l_2}{2} \cos \varphi_2 - \overset{(-F)}{(F - m_3 \ddot{x}_{S_3})} \cdot \frac{l_2}{2} \sin \varphi_2$$

$$\emptyset = G_2 \cos \varphi_2 - 2N_2 \cos \varphi_2 - F \sin \varphi_2 + m_3 \ddot{x}_{S_3} \sin \varphi_2$$

$$N_2 = \frac{G_2 \cos \varphi_2 - (F - m_3 \ddot{x}_{S_3}) \sin \varphi_2}{2 \cos \varphi_2} = \frac{1}{2} \left[G_2 - \underbrace{(F - m_3 \ddot{x}_{S_3})}_{R_x} \right] \operatorname{tg} \varphi_2 = \frac{1}{2} \left[G_2 - F \left(1 - \frac{m_3}{m_2 + m_3} \right) \operatorname{tg} \varphi_2 \right]$$

O tom, zda se "2" odtáhne od podložky ($N_2 < \emptyset$), rozhodují hodnoty $\varphi_2, m_2, m_3, F, G_2$.
 (Pro F působící směrem vlevo bude vždy $N_2 > \emptyset$)