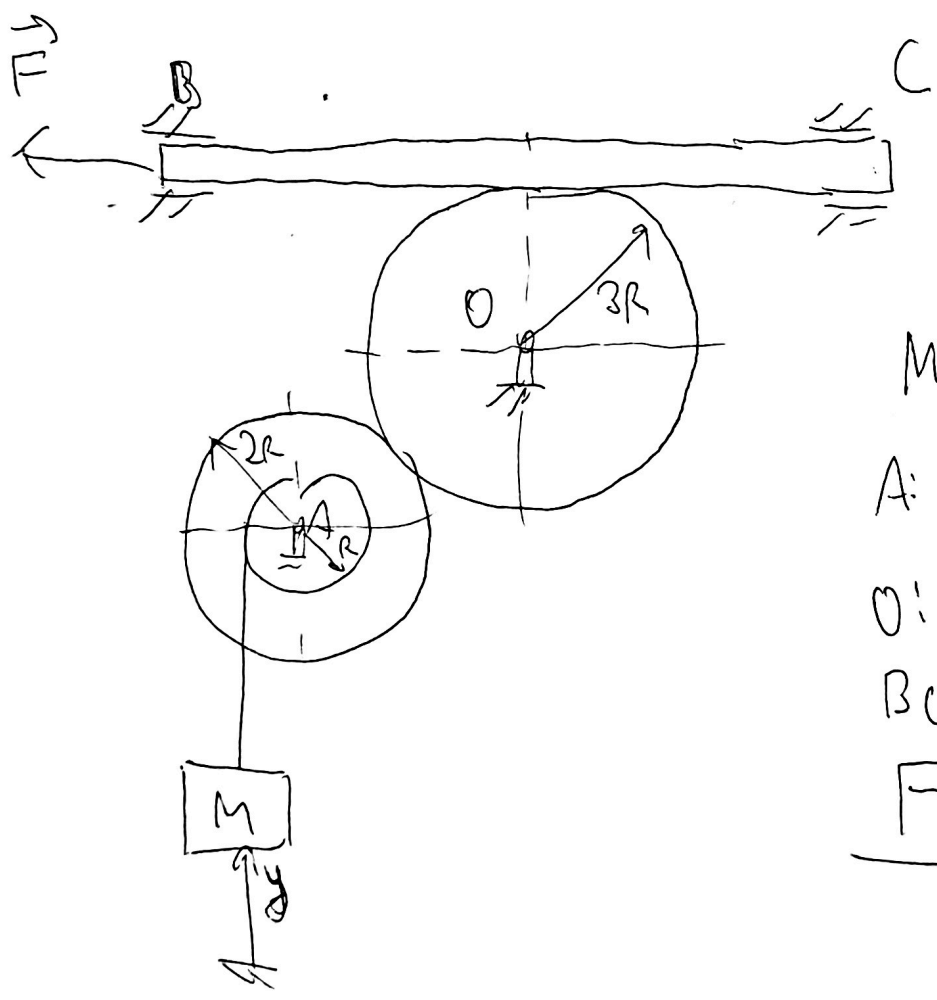


(7) Система у вертикалној равни чине: теглет  $M$ ,  
 масе  $m$ , улоге  $\sqrt{2}R$  и  $3R$ , коаксијални диск  
 $A$ , полуметрица  $R$  и  $2R$  и масе  $m$  и крак  $\sqrt{2}R$   
 $l = \sqrt{2}R$ , диск  $O$  масе  $m$ , полуметрица  $3R$ ,  
 леве  $BC$  масе  $m$ . Беле у тачкама  $O$  и  $A$  с  
 зглобне, између ентеријера  $BC$  и  $A$  и  
 на левој девије хоризонтална сила  $F = 3mg$   
 у праву убрзање тачка  $M$ ,  $CM$  у улогу и  
 сила између леве  $BC$  и диска  $O$ .

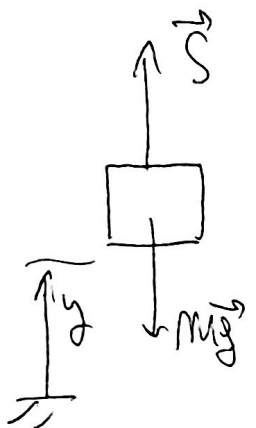


- $M: m$
- $A: R, 2R, m, l = \sqrt{2}R$
- $O: m, 3R$
- $BC: m$
- $F = 3mg$

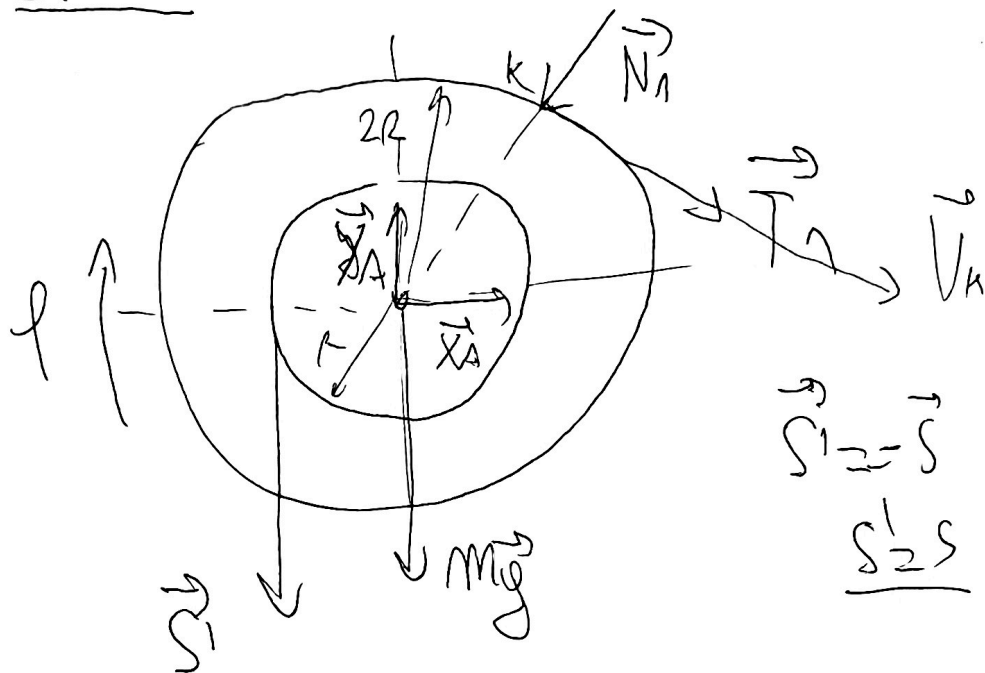
TEMA 11 M

$$M\vec{a}_M = M\vec{g} + \vec{S}$$

$$m\ddot{y}_M = -Mg + S \quad (1)$$



Slack A



$$\begin{aligned} \vec{S}' &= -\vec{S} \\ \underline{S' &= S} \end{aligned}$$

$$\overset{(A)}{J_{A2}} \ddot{\varphi} = 2RT_1 - S'R$$

$$\overset{(A)}{J_{A2}} = mi^2 = 2MR^2$$

$$\dot{y}_M = R\dot{\varphi} \Rightarrow \underline{\underline{\ddot{y}_M = R\ddot{\varphi}}}$$

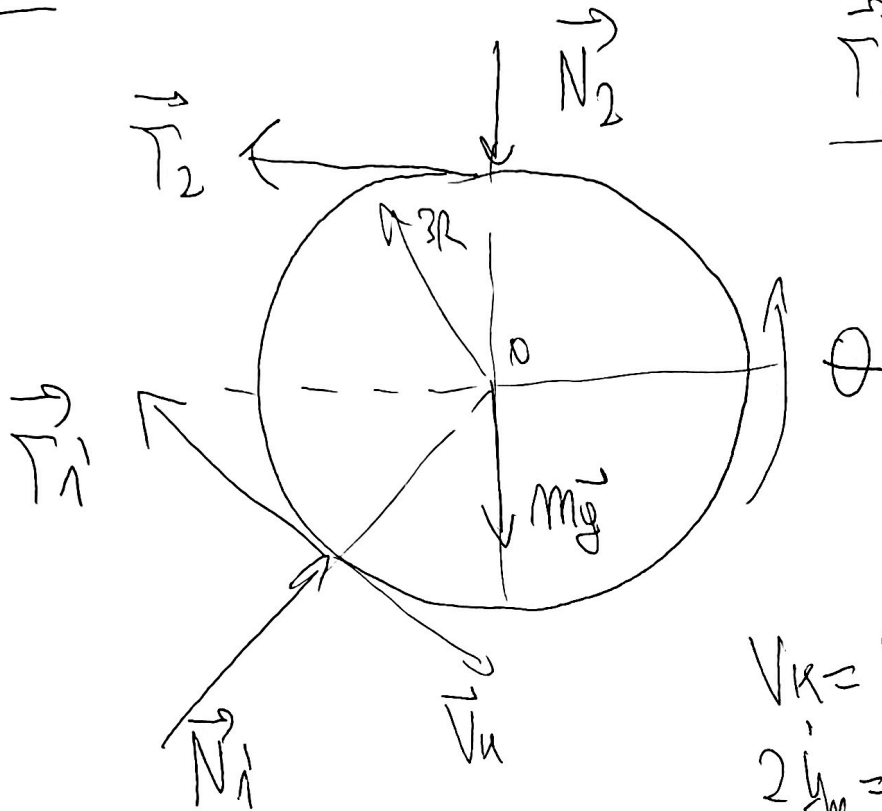
$$2MR^2 \ddot{\varphi} = 2RT_1 - SR$$

$$\underline{2m\ddot{y}_M = 2T_1 - S} \quad (2)$$

$$\begin{aligned} 1) \quad \left. \begin{aligned} m\ddot{y}_M &= -Mg + S \\ 2m\ddot{y}_M &= 2T_1 - S \end{aligned} \right\} \Rightarrow \underline{3m\ddot{y}_M = -Mg + 2T_1} \quad (3) \end{aligned}$$

$$\underline{v_M = 2R\dot{\varphi} = 2\dot{y}_M}$$

Аукр 0



$$\vec{T}_1' = -\vec{T}_1, \quad \vec{T}_1' = \vec{T}_1$$

$$V_K = 3R \dot{\theta}$$

$$2 \dot{y}_M = 3R \dot{\theta} \Rightarrow \dot{\theta} = \frac{2}{3R} \dot{y}_M$$

$$\ddot{\theta} = \frac{2}{3R} \ddot{y}_M$$

$$J_{Oz} \ddot{\theta} = -T_1 \cdot 3R + T_2 \cdot 3R, \quad J_{Oz} = \frac{1}{2} m (3R)^2 = \frac{9}{2} m R^2$$

$$\frac{9}{2} m R^2 \ddot{\theta} = -3R T_1 + 3R T_2$$

$$\frac{9}{2} m R \frac{2}{3R} \ddot{y}_M = -3T_1 + 3T_2$$

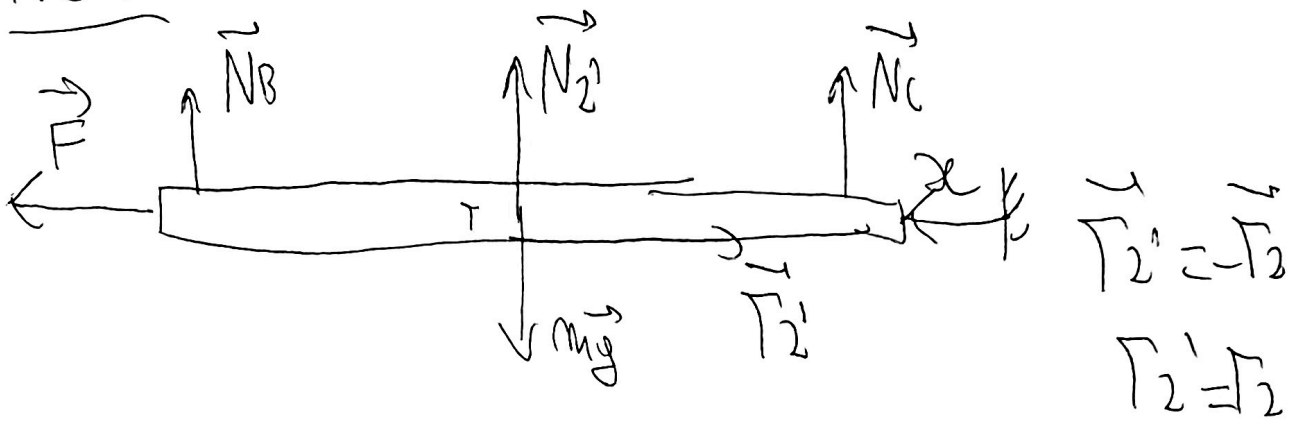
$$3m \ddot{y}_M = -3T_1 + 3T_2 \Rightarrow m \ddot{y}_M = -T_1 + T_2 \quad (3)$$

~~$m \ddot{y}_M = -3T_1 + 3T_2$~~

$$3m \ddot{y}_M = -mg + 2T_1$$
$$m \ddot{y}_M = -T_1 + T_2 / (2)^{+}$$

$$5m \ddot{y}_M = -mg + 2T_2 \quad (1^{**})$$

NETR



$$\dot{x} = 3R\dot{\theta} \Rightarrow \ddot{x} = 3R\ddot{\theta} = 3R \frac{2}{3R} \ddot{y}_m \Rightarrow \underline{\underline{\ddot{x} = 2\ddot{y}_m}}$$

$$\underline{m\vec{a}_T = m\vec{g} + \vec{F} + \vec{T}_2' + \vec{N}_2' + \vec{N}_B + \vec{N}_C}$$

$$\underline{m\ddot{x} = F - T_2'} \quad (1)$$

$$\underline{2m\ddot{y}_m = 3mg - T_2} \quad (2)$$

$$\begin{aligned} 5m\ddot{y}_m &= -mg + 2T_2 \\ 2m\ddot{y}_m &= 3mg - T_2 \quad | \cdot (2) \end{aligned}$$

$$9m\ddot{y}_m = 5mg \Rightarrow$$

$$\boxed{a_m = \ddot{y}_m = \frac{5}{9}g}$$

$$1) \rightarrow \frac{5}{9}mg = -mg + S \Rightarrow$$

$$\boxed{S = \frac{14}{9}mg}$$

$$3) \rightarrow \boxed{T_2 = 3mg - 2m\ddot{y}_m = 3mg - \frac{10}{9}mg}$$
$$\boxed{T_2 = \frac{17}{9}mg}$$