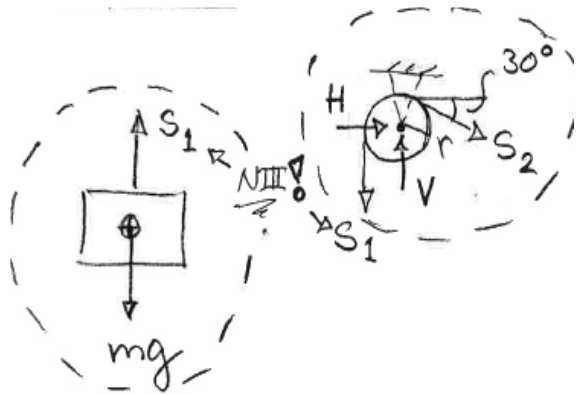


Sp2: Lösning uppgift 1



Två delsystem:
vikten och
trissan

Vikten: (\uparrow) $S_1 - mg = 0$;
 $S_1 = mg = \underline{\underline{294\text{ N}}}$

Trissan:

$\curvearrowright S_1 \cdot r - S_2 \cdot r = 0$; $S_1 = S_2$! ... (*)

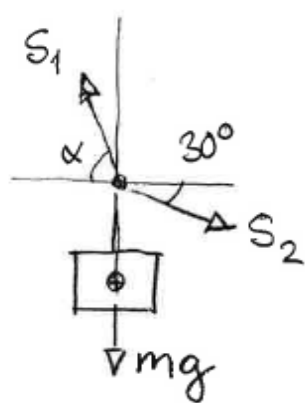
Alltid samma (drag)kraft på ömse sidor om en trissa!

Upplagskrafter:

(\rightarrow) $H + S_2 \cos 30^\circ = 0$; $H = -294 \cdot \cos 30^\circ =$
 $\underline{\underline{-255\text{ N}}}$
OBS! tecken

(\uparrow) $V - S_1 - S_2 \sin 30^\circ = 0$;
 $V = 294 (1 + \sin 30^\circ) = \underline{\underline{441\text{ N}}}$
 \uparrow (*)

Sp2: Lösning uppgift 2



$$\cos \alpha = \frac{1.5}{5}$$

$$\alpha = 72.5^\circ$$

Insättning av (*) \Rightarrow

$$(2.88 S_2) \cdot \sin 72.5^\circ - S_2 \sin 30^\circ = mg ;$$

$$S_2 = \frac{mg}{2.88 \sin 72.5^\circ - \sin 30^\circ} = \frac{200 \cdot 9.81}{2.25} = \underline{\underline{870 \text{ N}}}$$

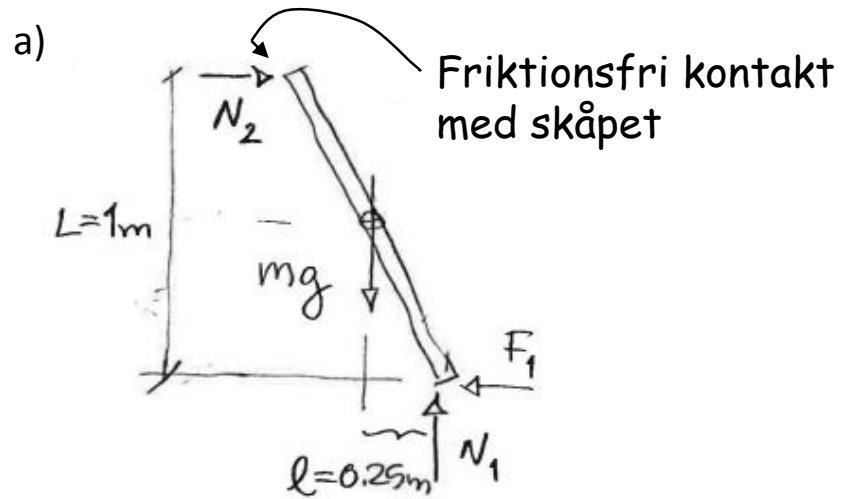
$$(\rightarrow) \quad S_2 \cos 30^\circ - S_1 \cos 72.5^\circ = 0 ;$$

$$S_1 = \frac{\cos 30^\circ}{\cos 72.5^\circ} S_2 ; \quad S_1 = 2.88 S_2 \dots (*)$$

$$(\uparrow) \quad S_1 \sin 72.5^\circ - S_2 \sin 30^\circ - mg = 0 ;$$

Sp2: Lösning uppgift 3

Friläggning och NIII:



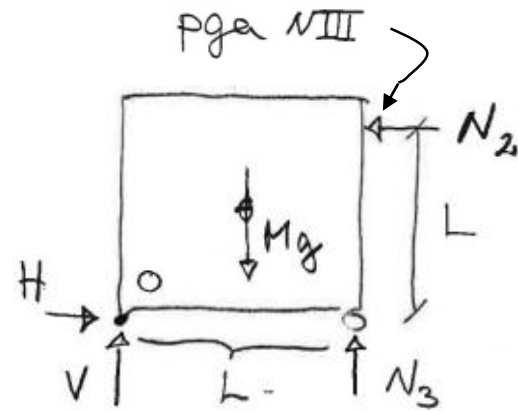
$$(\uparrow) \quad N_1 - mg = 0 ; \quad N_1 = mg$$

$$(\rightarrow) \quad N_2 - F_1 = 0 ; \quad N_2 = F_1$$

$$\overset{1}{\curvearrowright} \quad N_2 \cdot L - mg \cdot l = 0 ;$$

$$N_2 = 0.25mg = \underline{\underline{12.3\text{N}}}$$

b)



$$(\rightarrow) \quad H - N_2 = 0 ;$$

$$H = N_2 = 12.3\text{N}$$

$$(\uparrow) \quad V + N_3 - Mg = 0 ;$$

$$V + N_3 = Mg \dots (*)$$

c)

$$\overset{0}{\curvearrowright} \quad N_2 \cdot L + N_3 \cdot L - Mg \cdot \frac{L}{2} = 0 ;$$

$$N_3 = \frac{1}{2}Mg - N_2 = \frac{1}{2} \cdot 10 \cdot 9.81 - 12.3 = 37\text{N}$$

$$(*) \Rightarrow \quad V = Mg - N_3 = 10 \cdot 9.81 - 37 = \underline{\underline{61\text{N}}}$$