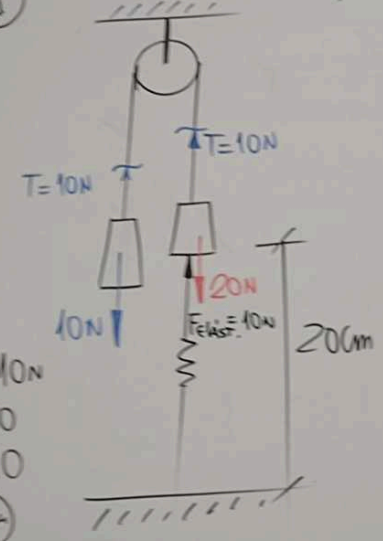
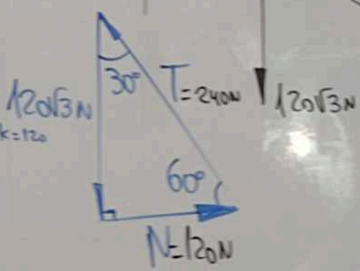
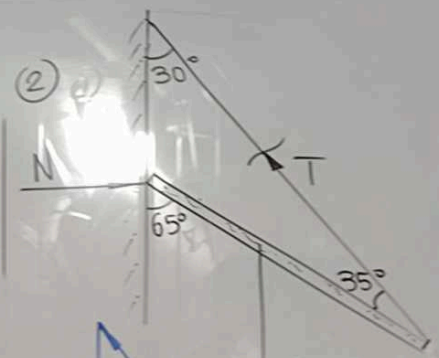


①  $m_1 = 1\text{ kg}; m_2 = 2\text{ kg}; k = 200 \frac{\text{N}}{\text{m}}$   
 $k = 2 \text{ N/cm}$

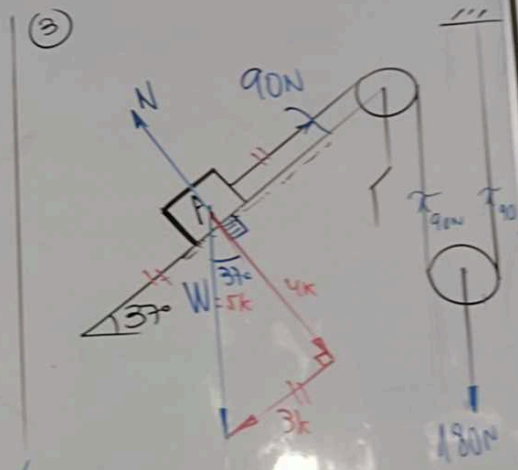


✓  $F_{\text{elast}} = 10 \text{ N}$   
 $kx = 10$   
 $2x = 10$   
 $x = 5 \text{ cm}$

✓ long. natural =  $20 \text{ cm} + 5 \text{ cm}$   
 $= 25 \text{ cm}$

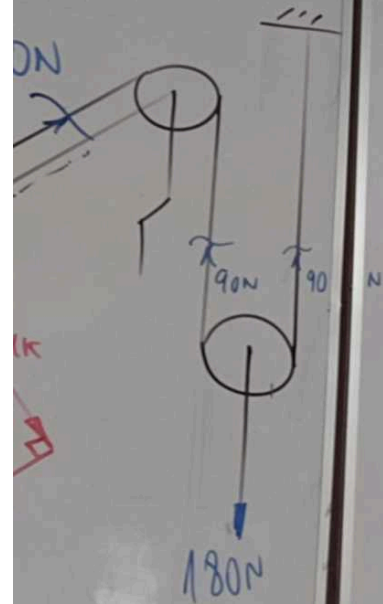


$k_3 = 120\sqrt{3} \text{ N}$   
 $k = 120$



$3k = 90$   
 $k = 30$   
 $W = 150 \text{ N}$

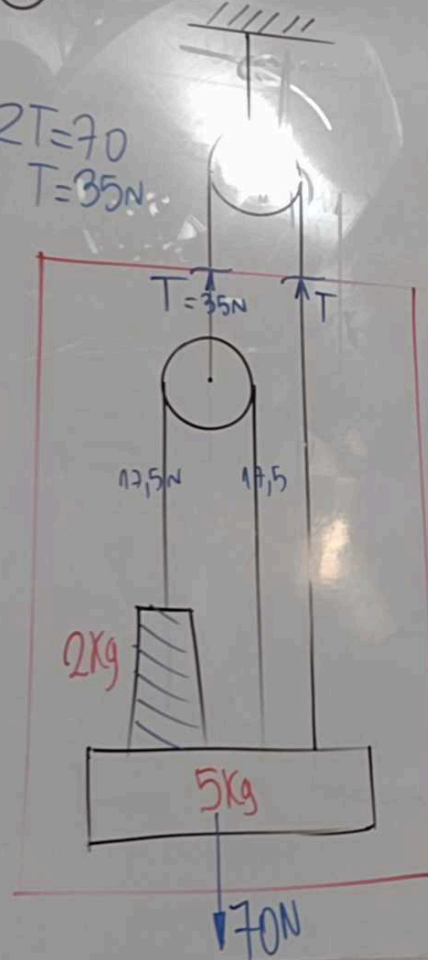
④  $2T = 70$   
 $T = 35$



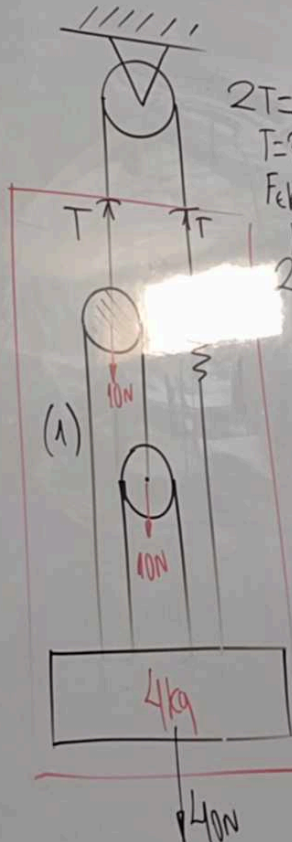
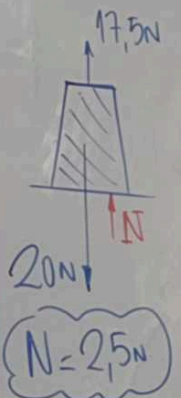
④

$$2T = 70$$

$$T = 35N$$



⑤



$$2T = 60$$

$$T = 30N$$

$$F_{\text{elast.}} = 30N$$

$$KX = 30$$

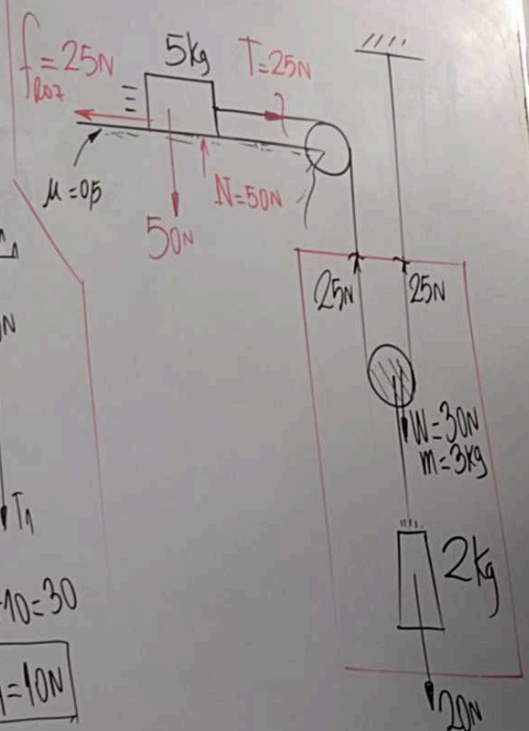
$$20X = 30$$

$$X = 1.5cm$$

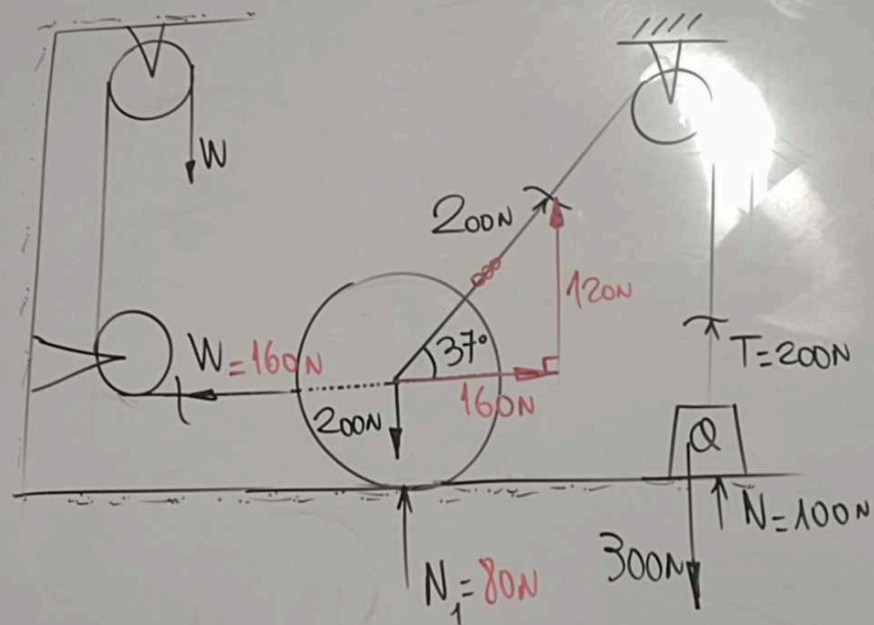
$$2T_1 + 10 = 30$$

$$T_1 = 10N$$

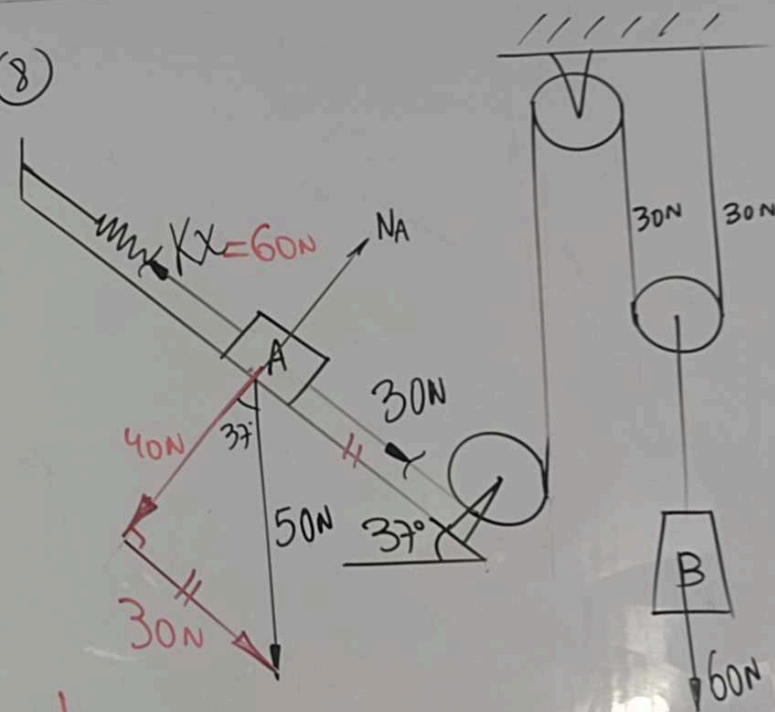
⑥



(7)



(8)



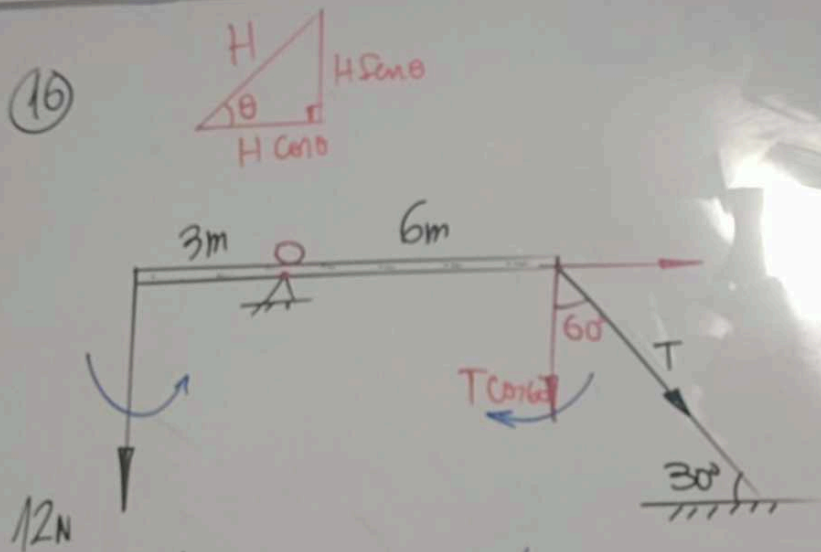
$$Kx = 60$$

$$60x = 60$$

$$x = 1\text{ cm}$$



(16)

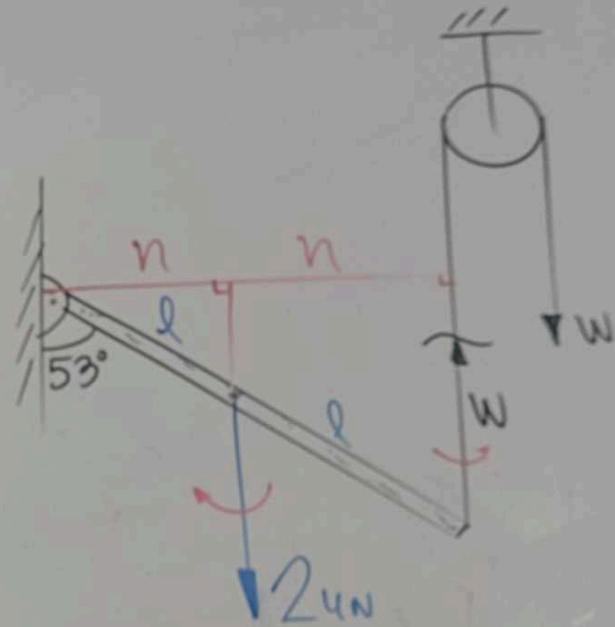


$$12(3) = T \cos 60$$

$$6 = T \cdot \frac{1}{2}$$

$$T = 12N$$

(17)



$$W(2n) = 24(n)$$

$$W = 12N$$

$$\frac{N_A}{\sin 143^\circ} = \frac{70}{\sin 98^\circ}$$

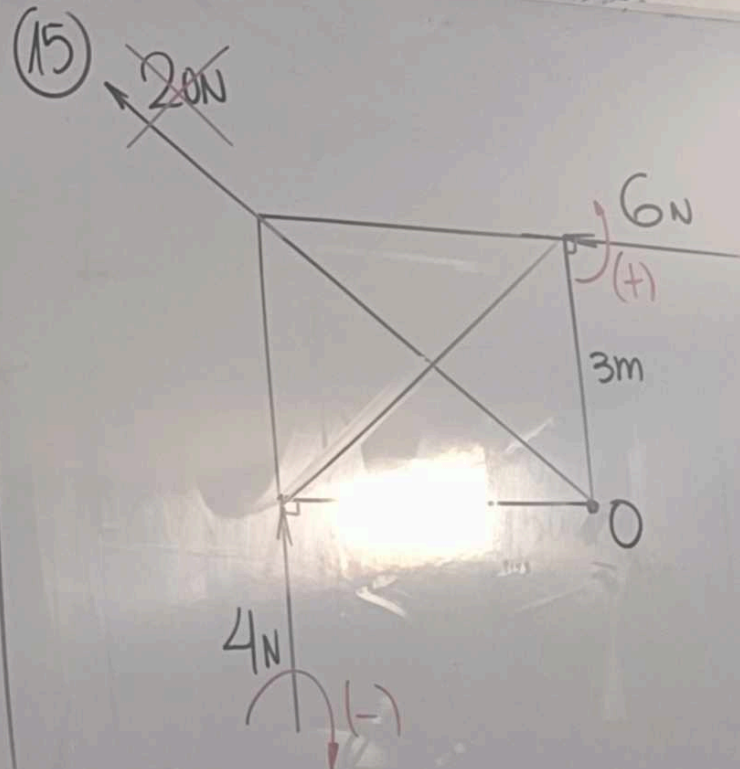
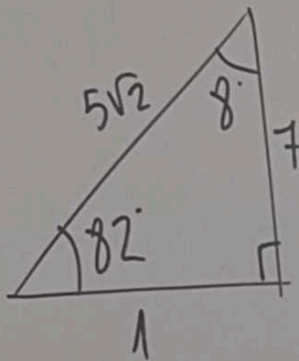
$$\rightarrow \frac{N_A}{\left(\frac{3}{5}\right)} = \frac{70}{\left(\frac{7}{5 \times 2}\right)}$$

$$\frac{5N_A}{3} = 50\sqrt{2}$$

$$N_A = 30\sqrt{2} \text{ N}$$

$$\sin 143^\circ = \sin 37^\circ = \frac{3}{5}$$

$$\sin 98^\circ = \sin 82^\circ = \frac{7}{5\sqrt{2}}$$

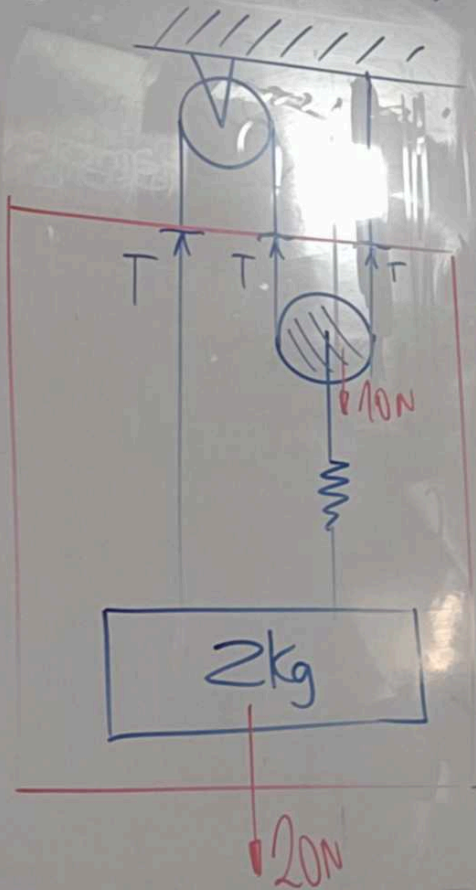


$$\begin{aligned} M_{0 \text{ Result.}} &= 6(3) - 4(4) \\ &= 2 \text{ Nm} \end{aligned}$$

30N

(9)

$$K = 200 \text{ N/m} = 2 \text{ N/cm}$$



$$3T = 30$$

$$T = 10 \text{ N}$$

$$10 \text{ N}$$

$$10 \text{ N}$$

$$10 \text{ N}$$

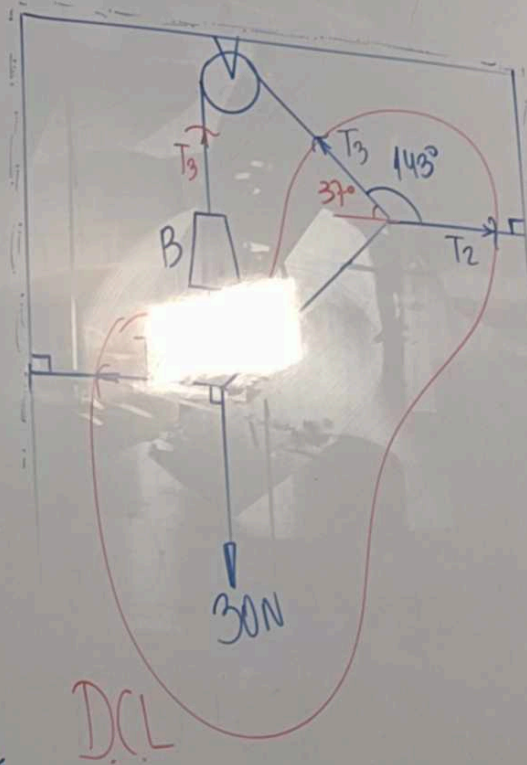
$$F_{\text{elast}} = 10 \text{ N}$$

$$KX = 10$$

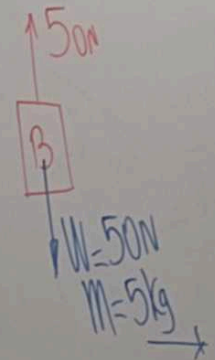
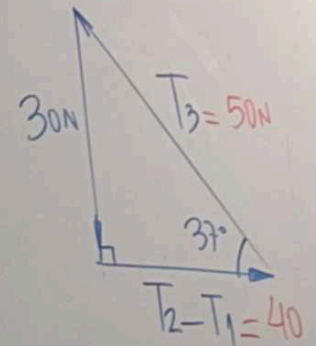
$$2X = 10$$

$$X = 5 \text{ cm}$$

(10)

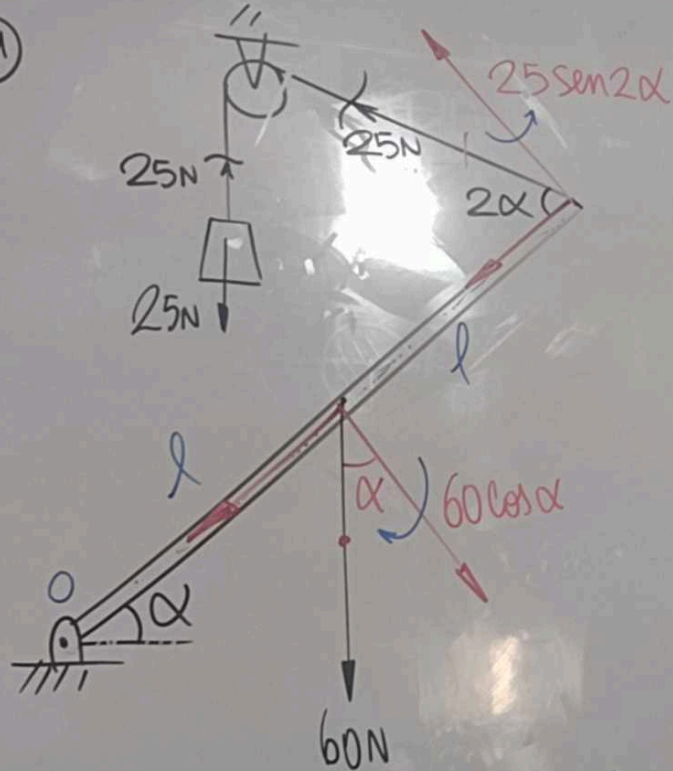


DCL





(21)

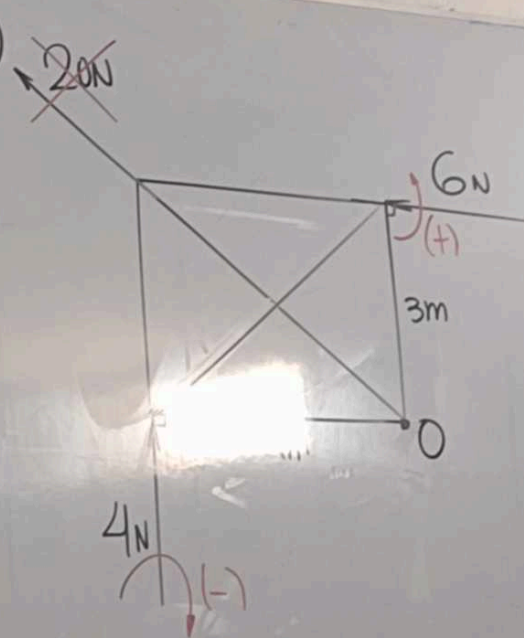


$$25 \sin 2\alpha (2l) = 60 \cos \alpha (l)$$

$$50 (2 \sin \alpha \cos \alpha) = 60 \cos \alpha$$

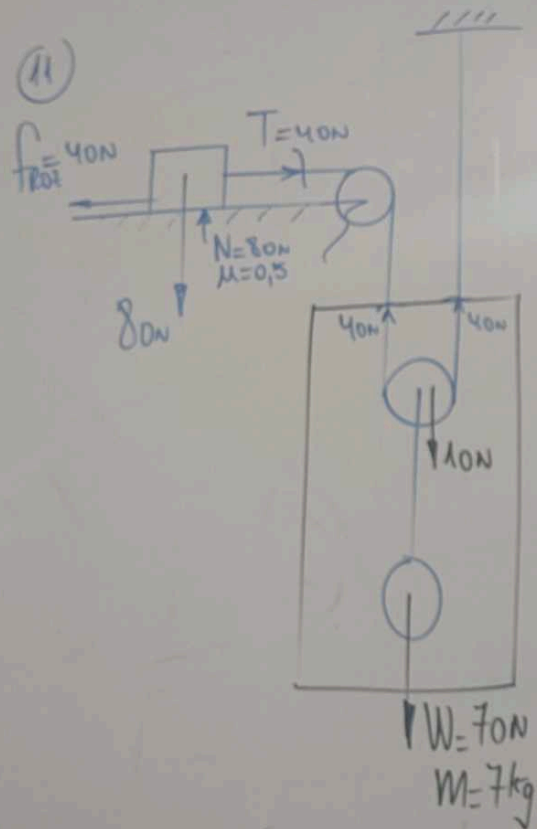
$$\sin \alpha = \frac{3}{5} \rightarrow \alpha = 37^\circ$$

(15)



$$M_{\text{Result}} = 6(3) - 4(4) = 2 \text{ Nm}$$

(11)



(12)

