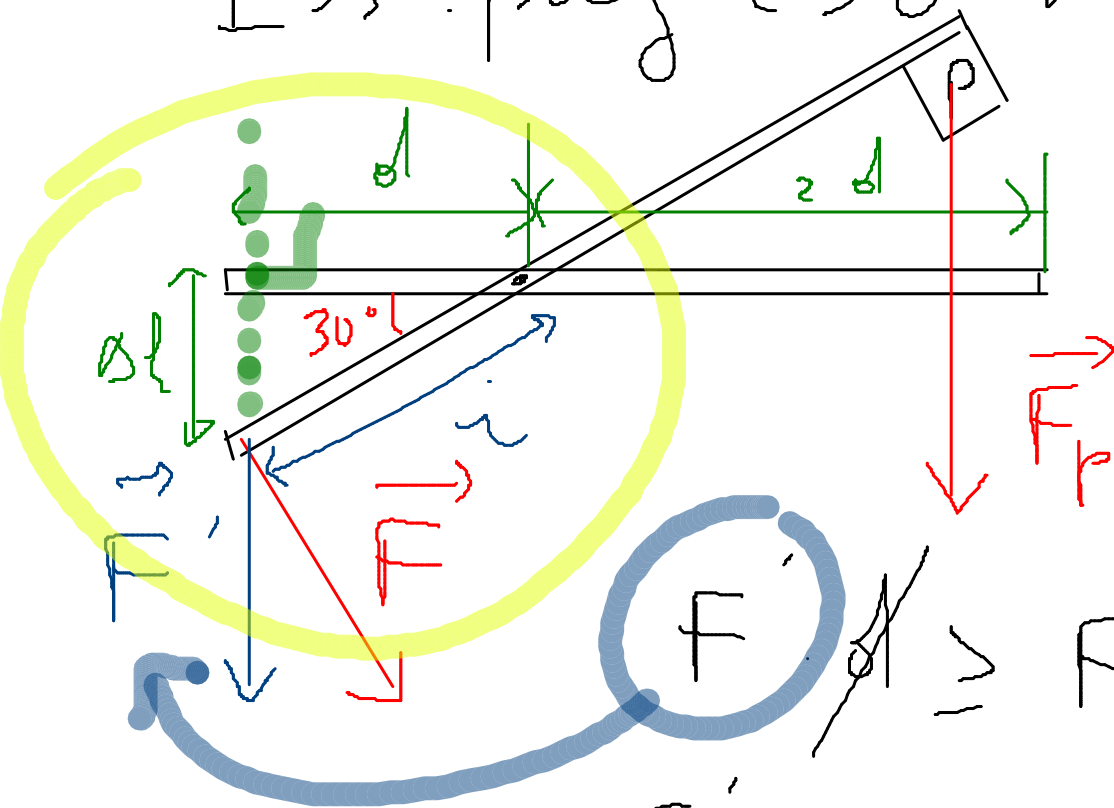


Ex. pay 250 h 8



$$F_p = 100 \text{ N}$$

$$F \geq 200 \text{ N}$$

$$\Delta h = 20 \text{ cm}$$

$$\Delta h = l \sin 30^\circ$$

$$l = l \cos 30^\circ$$

$$F \geq F_p \cdot 2$$

$$F \geq 2F_p$$

$$i = \frac{\Delta h}{\sin 30^\circ} \Rightarrow d = \frac{\Delta h}{\sin 30^\circ} \cos 30^\circ$$

$$= \frac{\Delta h \frac{\sqrt{3}}{2}}{\frac{1}{2}} = \sqrt{3} \Delta h$$
$$= 20 \text{ cm} \cdot \sqrt{3} \approx 35 \text{ cm}$$

$$85 \text{ kg}$$

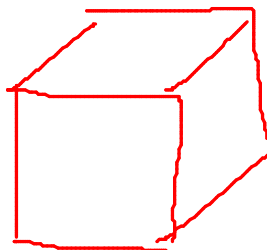
$$r' = 20 \text{ cm} \quad 0,2 \text{ m}$$

$$r'' = 10 \text{ cm} \quad 0,1 \text{ m}$$

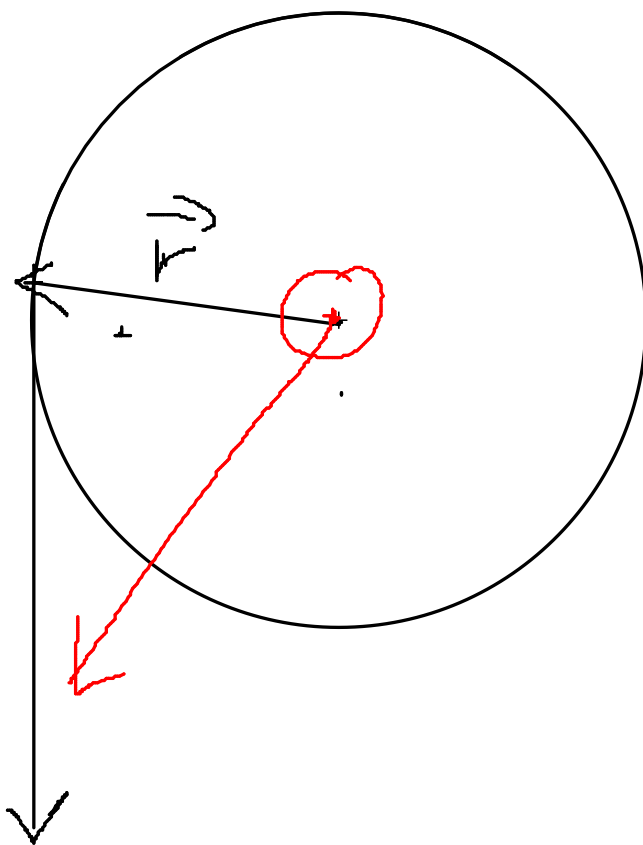
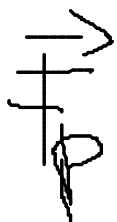
$$F_P = 85 \cdot 9,8 = 833 \text{ N}$$

$$M' = F_P \cdot 0,2 = 166,7 \text{ Nm} \approx 170 \text{ Nm}$$

$$M'' = F_P \cdot 0,1 = 833 \cdot 0,1 = 83,3 \text{ Nm} \approx 83 \text{ Nm}$$



$$\vec{M} = \vec{r} \times \vec{F}$$

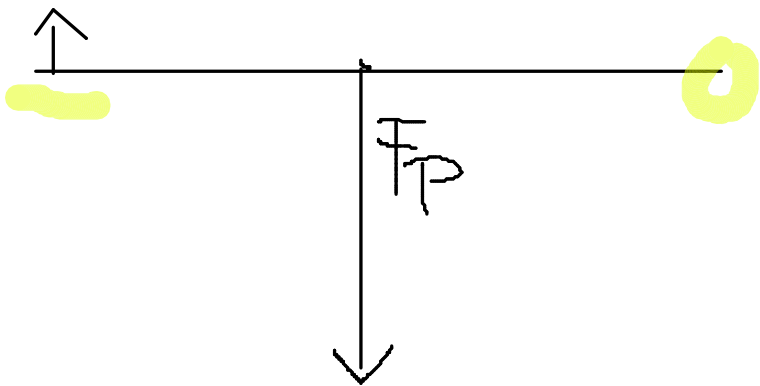


$$l = 80 \text{ cm}$$

$$m = 31 \text{ kg}$$

$$F_P = 31 \cdot 9,82 = 304 \text{ N}$$

$$M = F_P \cdot 0,4 = 304 \text{ N} \cdot 0,4 \text{ m} = 120 \text{ Nm}$$



$$M = l \cdot x$$

$$120 = x \cdot 9,8$$

$$x = \frac{120}{9,8} \approx 150 \text{ N}$$