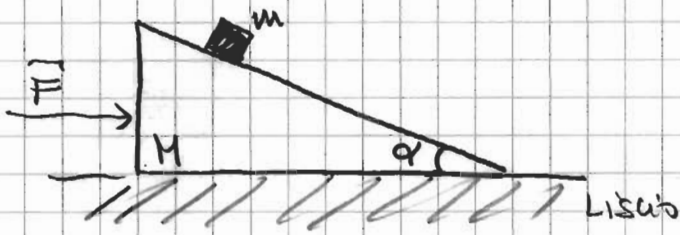
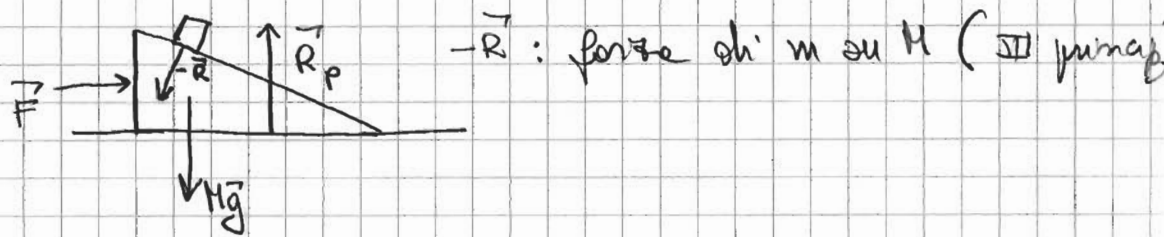
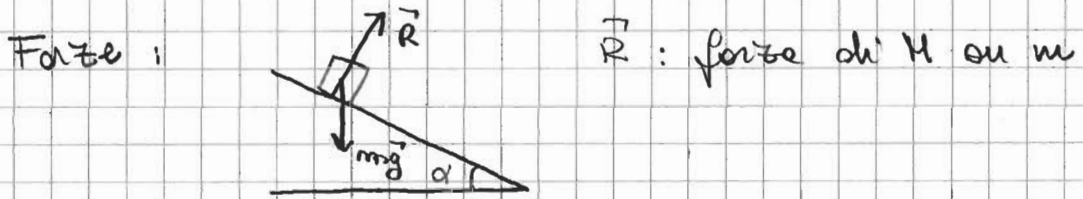


Esercizio sul corpo su piano inclinato



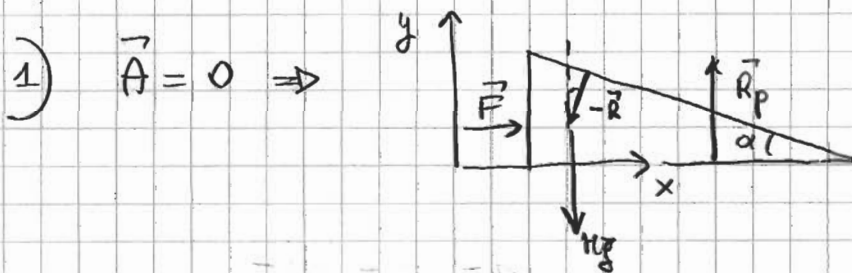
- Trovare \vec{F} t.c.
- 1) M stia fermo
 - 2) M e m si muovano come un unico blocco.



Eq. del moto

$$m \vec{a} = m \vec{g} + \vec{R}$$

$$M \vec{A} = M \vec{g} + \vec{R}_p - \vec{R} + \vec{F}$$



$$\begin{cases} -Mg + R_p - R \cos \alpha = 0 \\ F - R \sin \alpha = 0 \end{cases}$$



\Rightarrow scompongo l'eq. del moto di m scegliendo come assi (x', y')

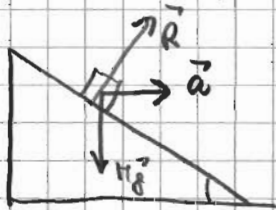
$$\begin{cases} \cancel{m} a = \cancel{m} g \sin \alpha \\ R = m g \cos \alpha \end{cases}$$

(porre a parte usando
(x, y). Allora devo imporre
 $a_y = -a_x \operatorname{tg} \alpha$)

$$\Rightarrow F = R \sin \alpha = m g \cos \alpha \sin \alpha$$

$$2) \vec{A} = \vec{a} = A \hat{x}$$

$$\Rightarrow \begin{cases} mA = F - R \sin \alpha \\ 0 = R \cos \alpha - Mg - R \sin \alpha \end{cases}$$



$$mA = R \sin \alpha$$

$$0 = -mg + R \cos \alpha \Rightarrow R \cos \alpha = mg$$

$$\cancel{m} A = \cancel{m} g \operatorname{tg} \alpha$$

$$\Rightarrow Mg \operatorname{tg} \alpha = F - mg \operatorname{tg} \alpha$$

$$F = (m + M) g \operatorname{tg} \alpha$$