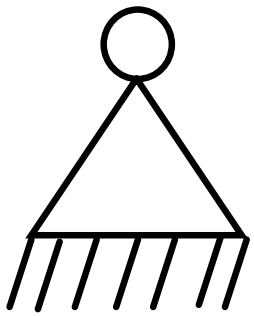
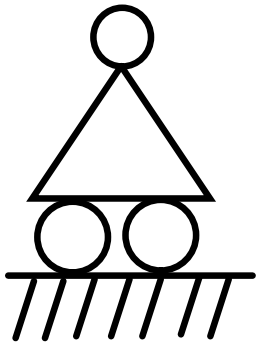
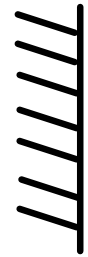


CERNIERA



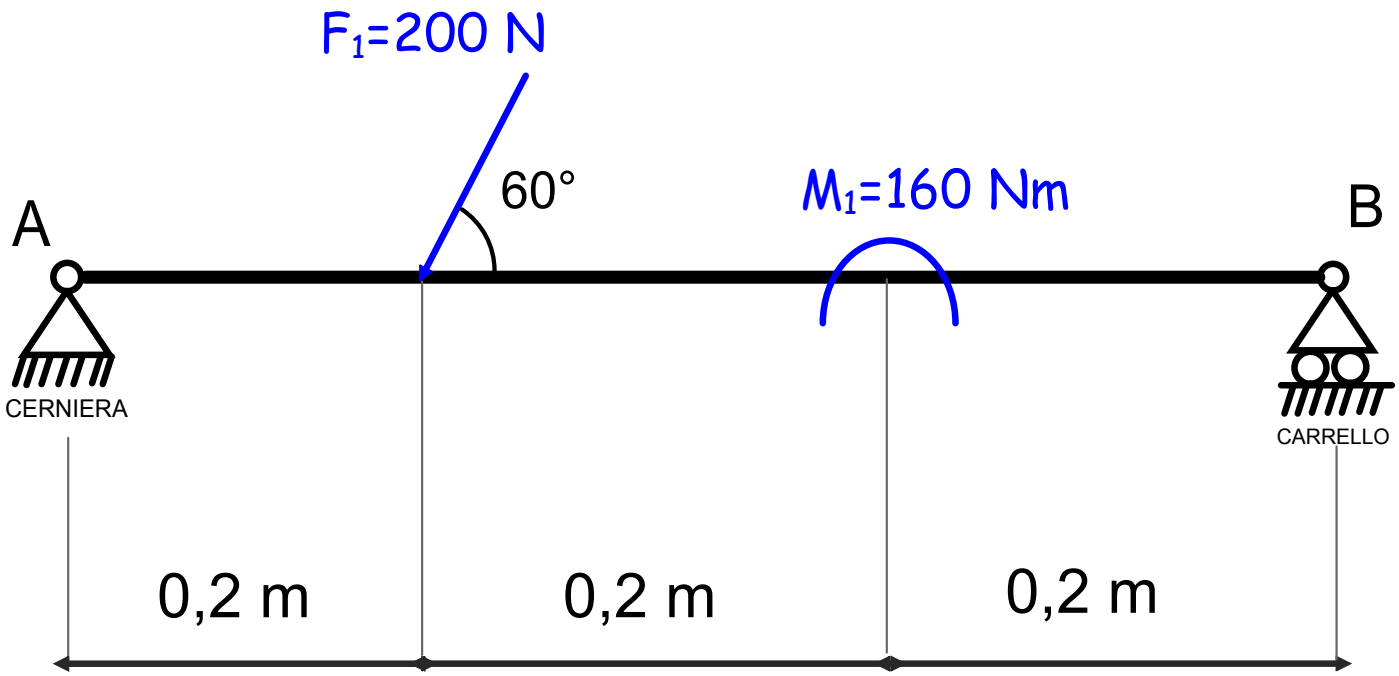
CARRELLO



INCASTRO

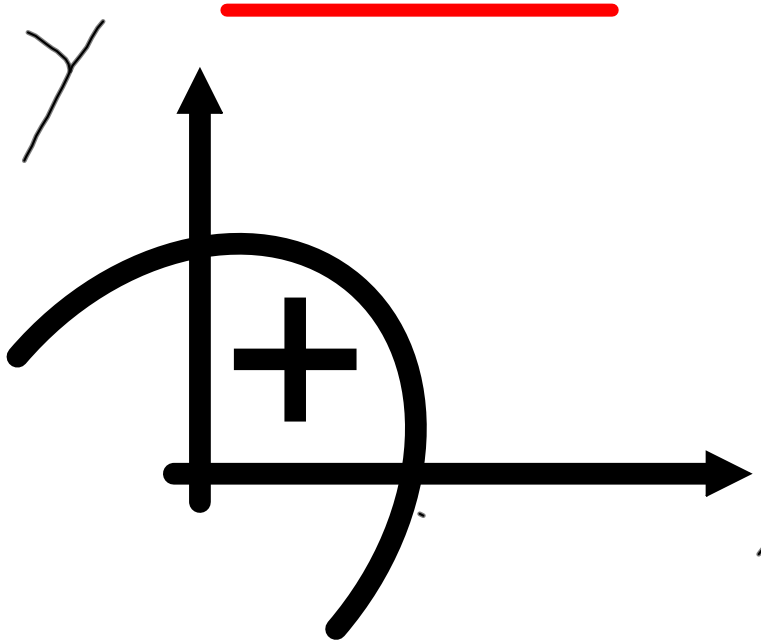
ESERCIZIO

Calcolare le reazioni vincolari nel seguente esempio.



SOLUZIONE

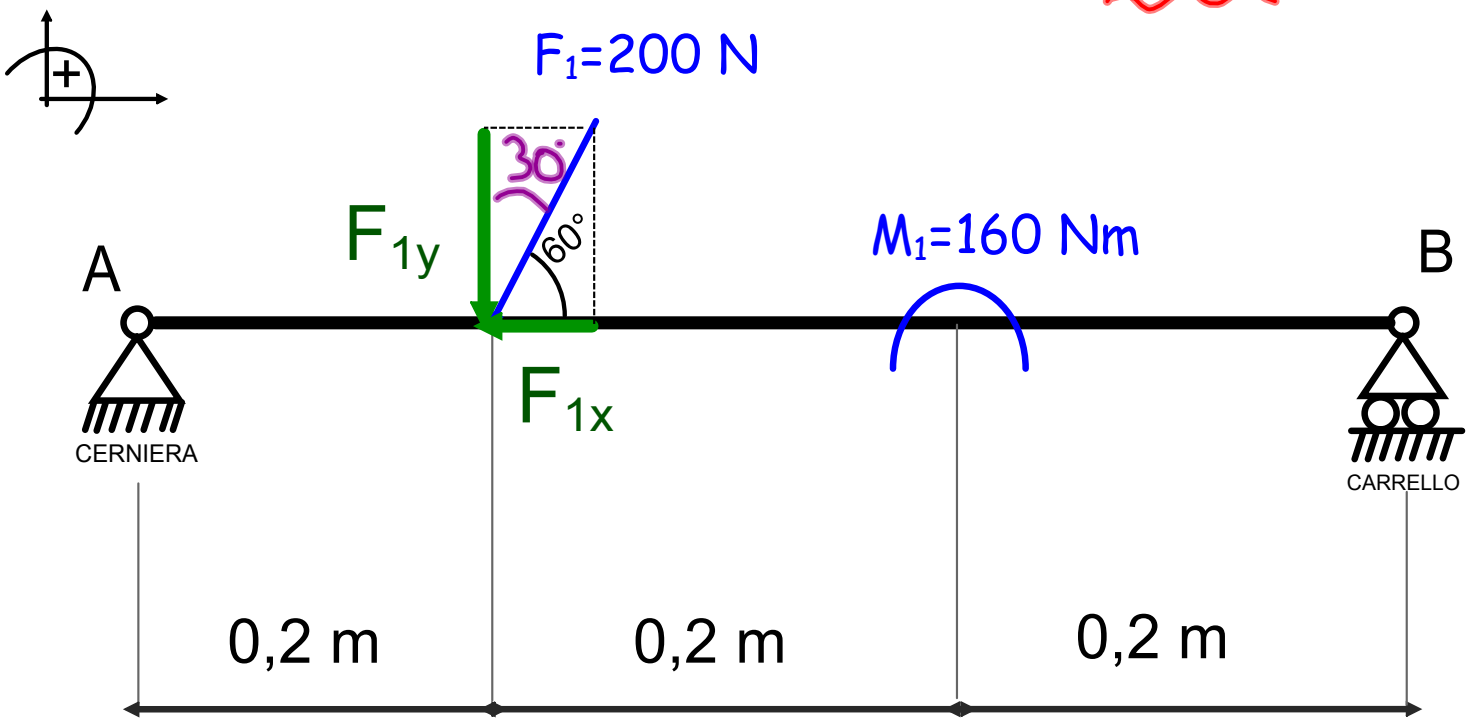
1) Stabilire il sistema di riferimento per le forze e per le rotazioni.



si consiglia di rifare l'esercizio con altri riferimenti

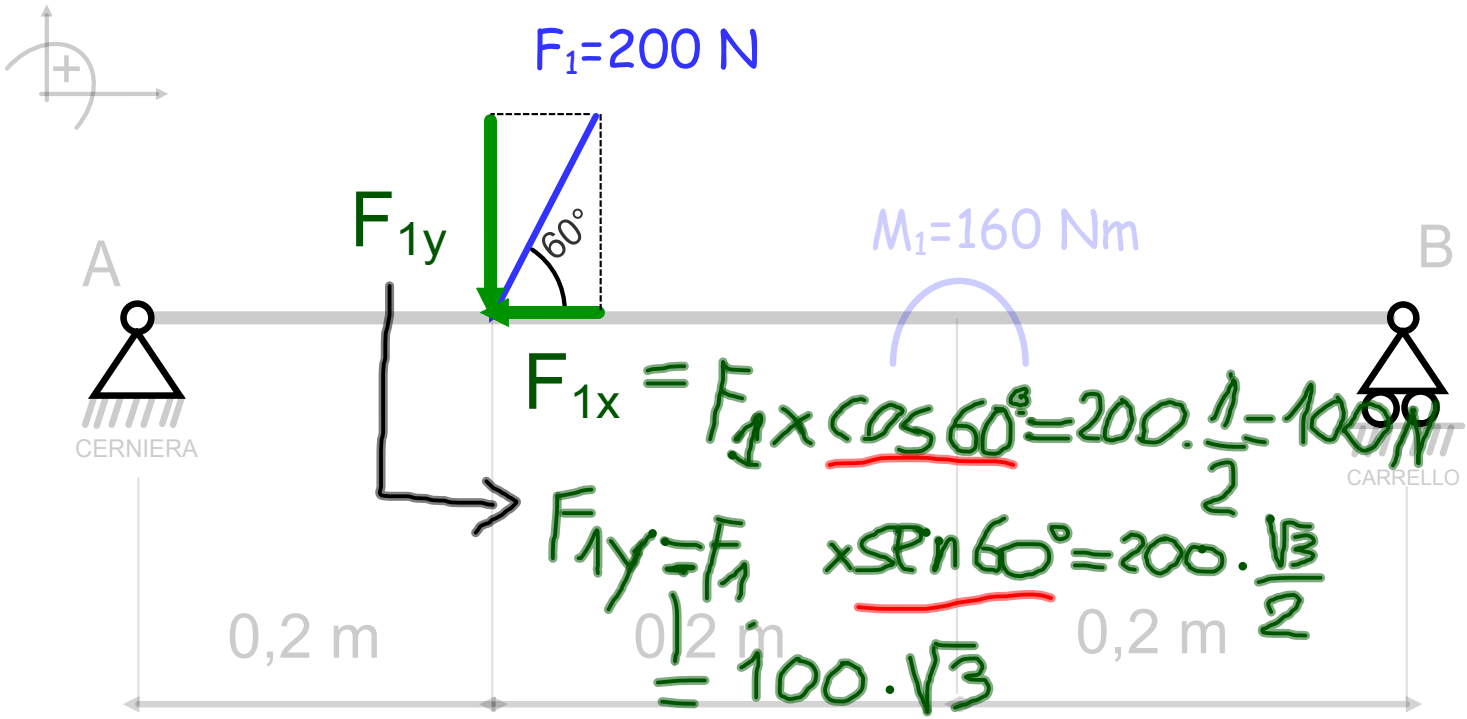
SOLUZIONE

2) Scomporre tutte le forze lungo le sue componenti principali ("x" e "y")



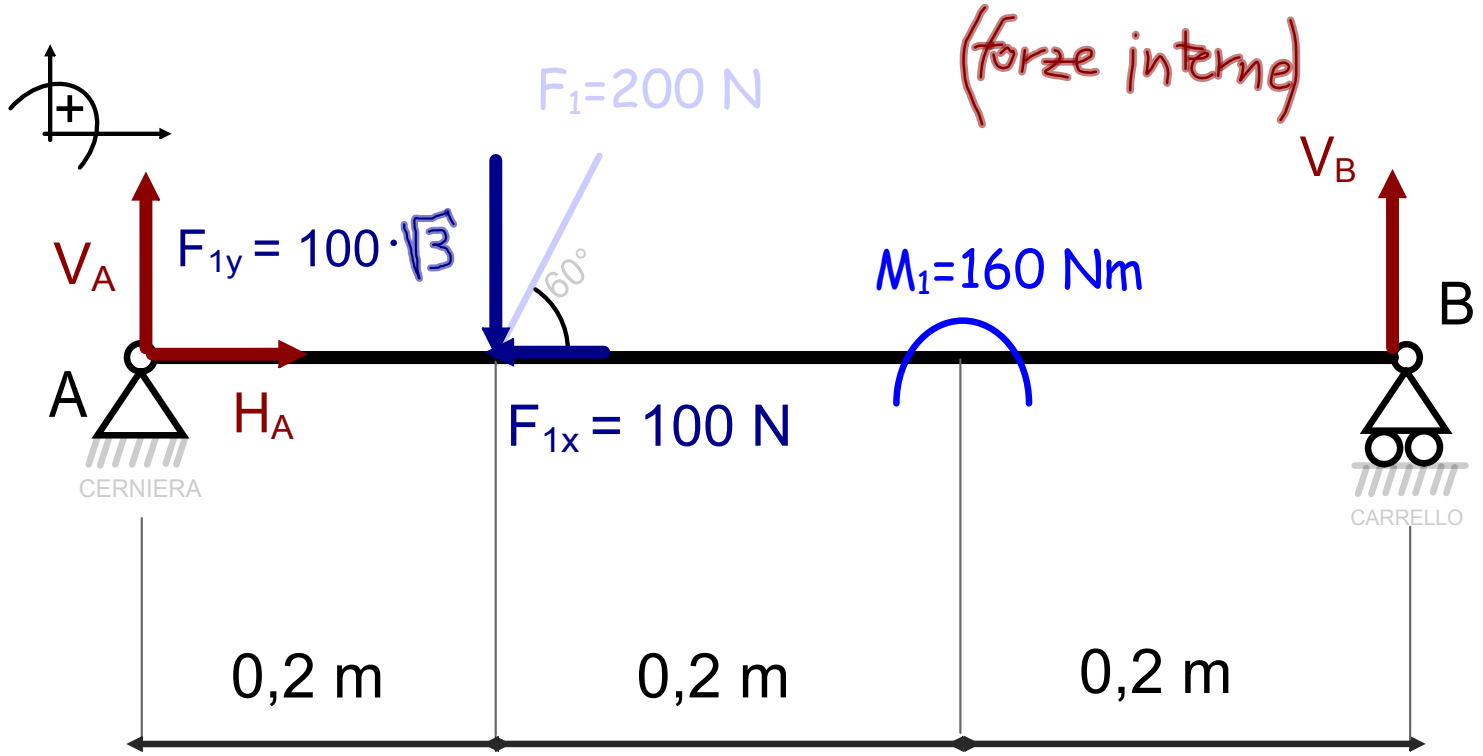
SOLUZIONE

2) Scomporre tutte le forze lungo le sue componenti principali ("x" e "y")

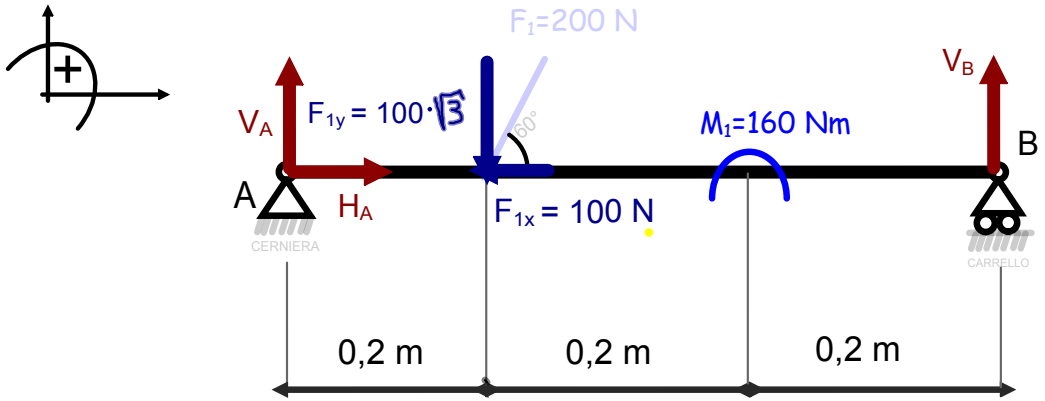


SOLUZIONE

3) Riportare le forze esterne e sostituire ai vincoli le reazioni vincolari

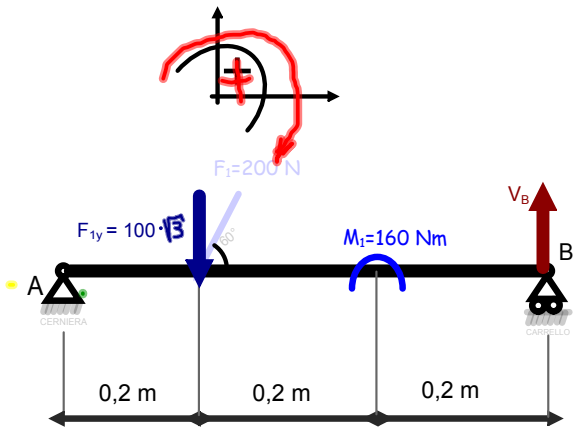


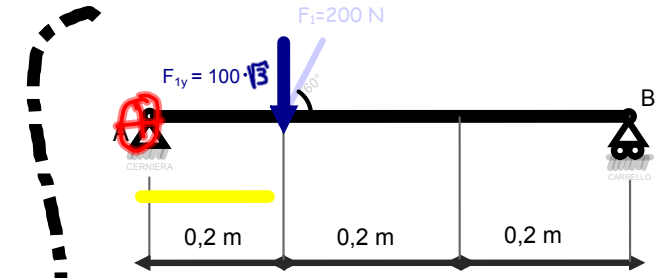
SOLUZIONE 4) Scrivere le equazioni cardinali della statica



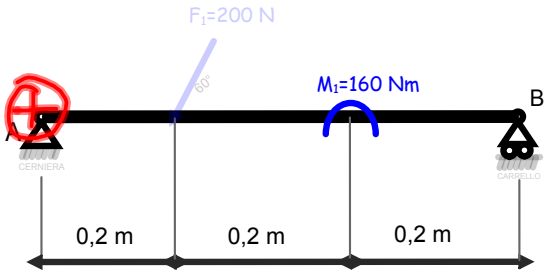
$$\begin{cases} \sum F_x = 0 \\ \sum F_y = 0 \\ \sum M_p = 0 \end{cases} \qquad \text{scelta polo "A"} \qquad \begin{cases} H_A - 100 = 0 \\ V_A - 100\sqrt{3} + V_B = 0 \\ \sum M_A = 0 \end{cases}$$

$\Sigma M_A = 0$

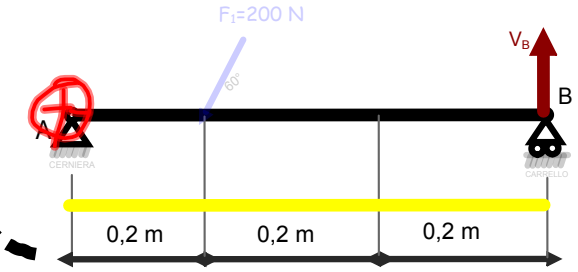




$+100\sqrt{3}\,0{,}2$



$+160$



$-V_B\,0{,}6$

$\Sigma M_A = 0 \Rightarrow +100\sqrt{3}\,0{,}2 + 160 - V_B\,0{,}6 = 0$

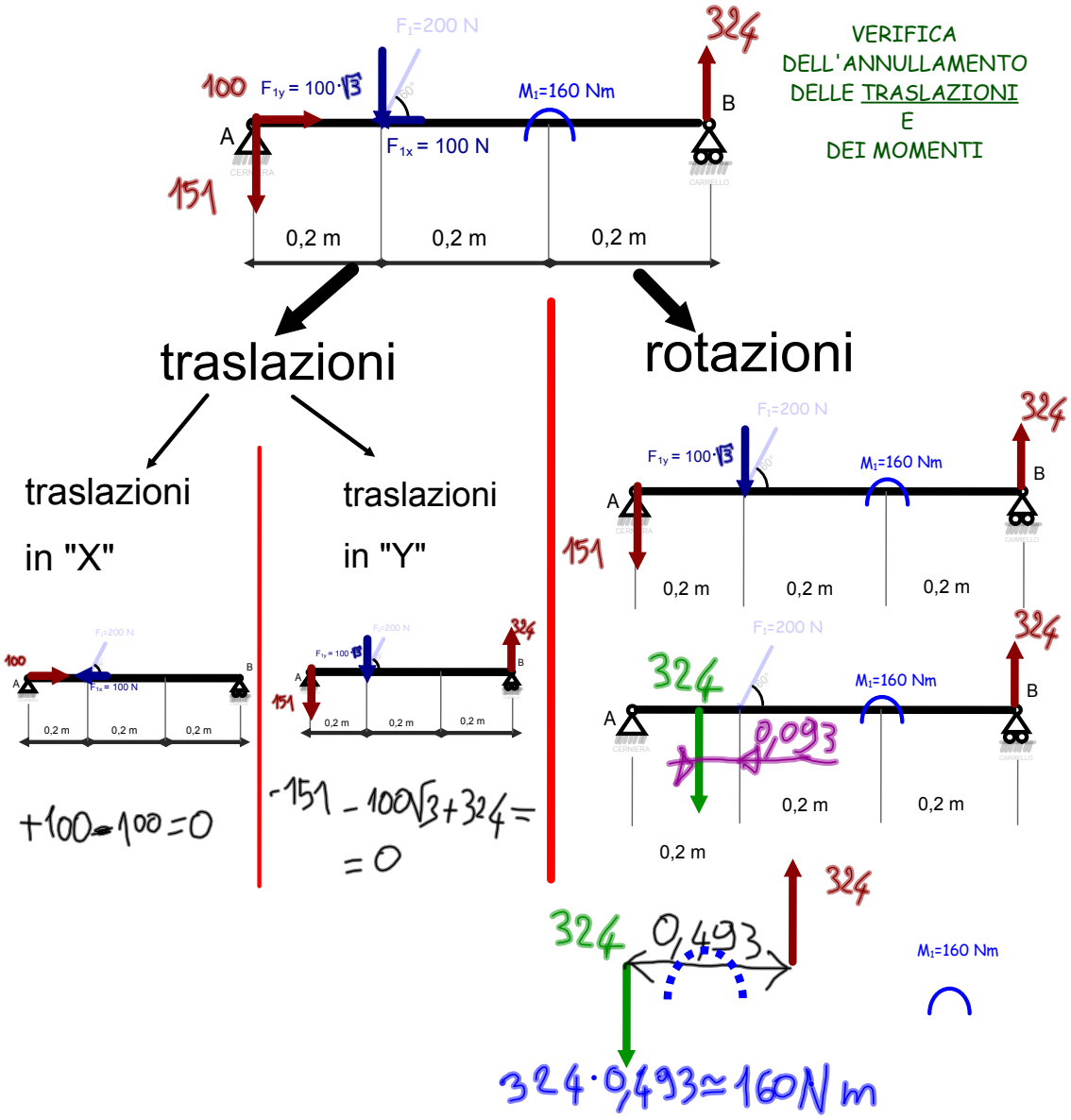
$$\begin{cases} H_A - 100 = 0 \\ V_A - 100\sqrt{3} + V_B = 0 \\ +100\sqrt{3}\,0{,}2 + 160 - V_B\,0{,}6 = 0 \end{cases}$$

Risolvendo risulta...

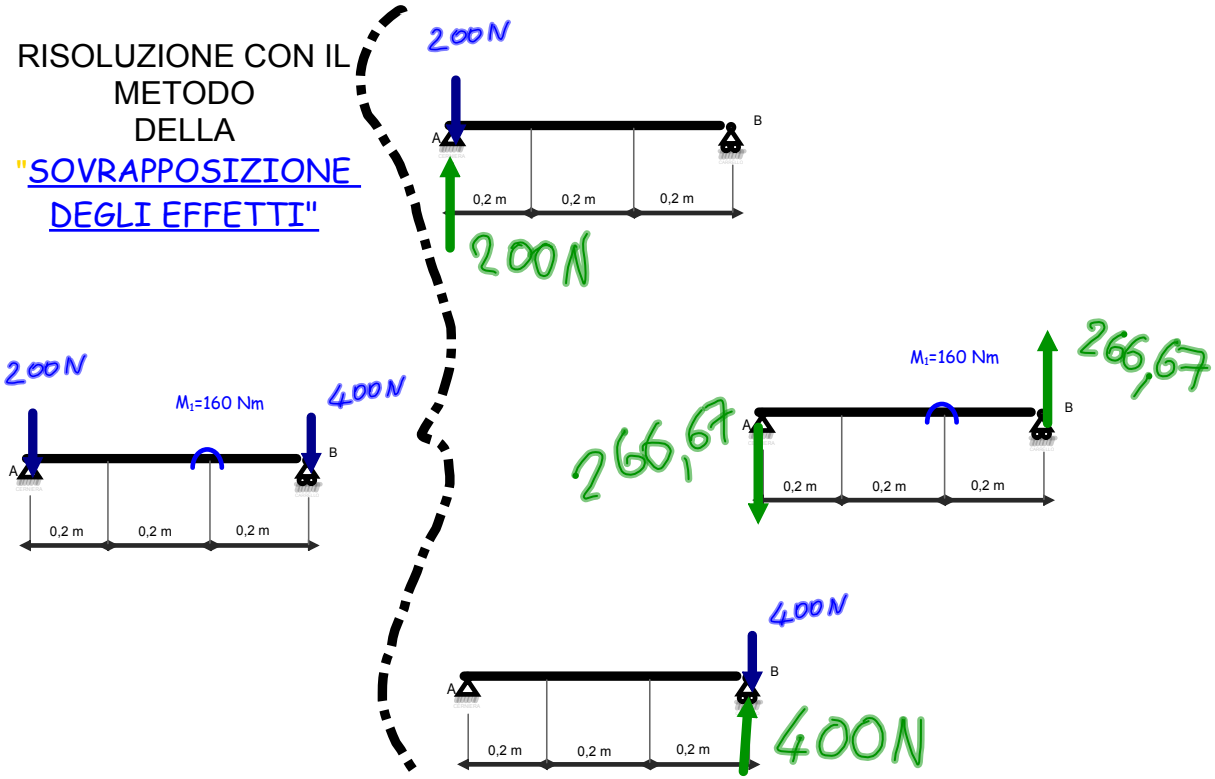
$H_A = 100\ N$

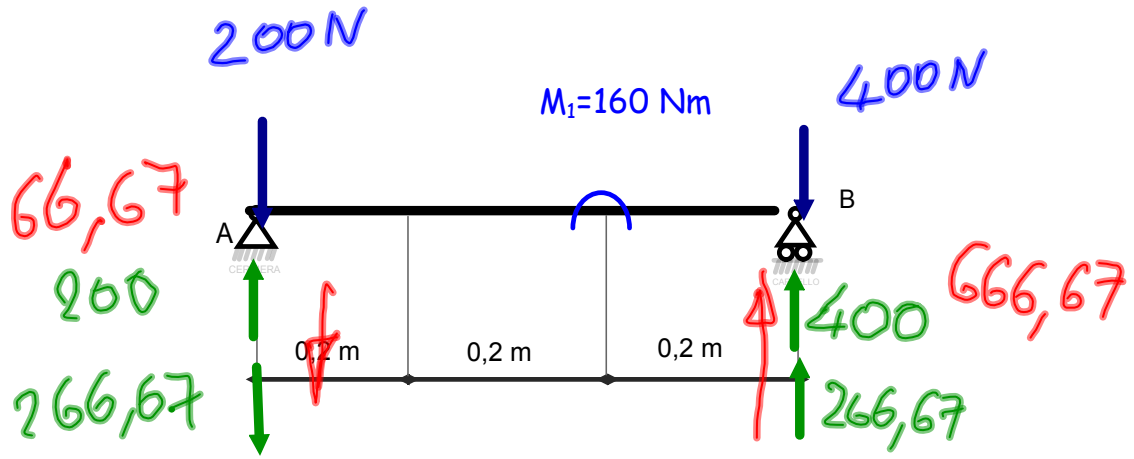
$V_A \simeq -151\ N$

$V_B \simeq 324\ N$


VERIFICA
DELL'ANNULLAMENTO
DELLE TRASLAZIONI
E
DEI MOMENTI
traslazioni
rotazioni
traslazioni
in "X"
traslazioni
in "Y"
F_1=200 N
F_{1y} = 100·√3
F_{1x} = 100 N
M_1=160 Nm
A
B
100
151
324
0,2 m
0,2 m
0,2 m
+100−100=0
−151 − 100√3 + 324 =
= 0
0,093
0,493
324 · 0,493 ≃ 160 N m

RISOLUZIONE CON IL METODO DELLA "SOVRAPPOSIZIONE DEGLI EFFETTI"





gen 19-11:32