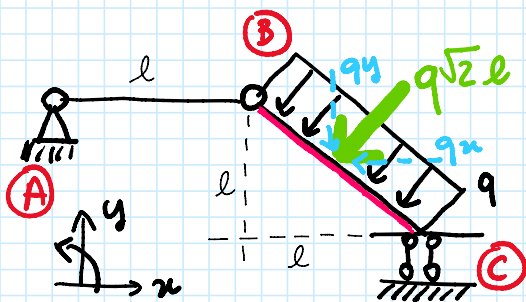


ESERCIZI di ANALISI STATICA

14 October 2022 09:13

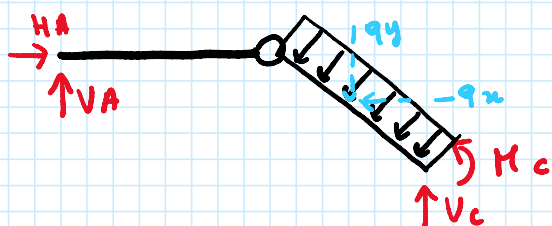
Esercizio 1



2 corpi $\rightarrow 6 g d l$

2 cerniere
+
1 doppia
biella $\rightarrow 6 g d v$

$$BC = \sqrt{l^2 + l^2} = \sqrt{2}l$$



$$q_x = q_y = q \sqrt{2}l \cdot \frac{\sqrt{2}}{2} = ql$$

$$\begin{aligned} \text{eq. lungo asse } x & \left\{ \begin{aligned} H_A - q_x l &= 0 \rightarrow H_A = ql \\ V_A + V_C - q_y l &= 0 \end{aligned} \right. \\ \text{ep. mom. in A} & \left\{ \begin{aligned} -q_x \frac{l}{2} - q_y \left(l + \frac{l}{2} \right) + H_C + V_C l &= 0 \end{aligned} \right. \end{aligned}$$

eq. ausiliaria (di momento in B) del corpo AB

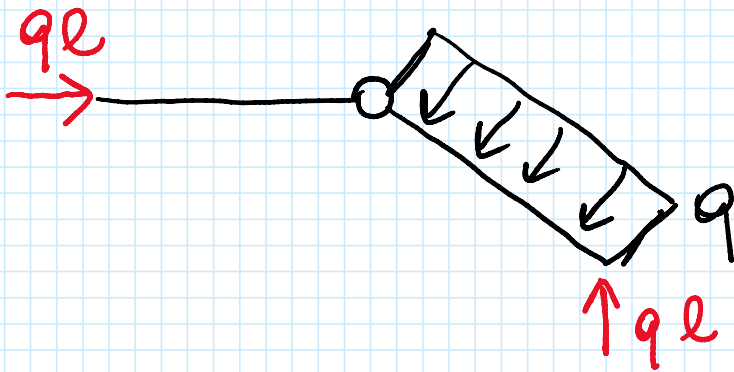
$$V_A l = 0 \rightarrow V_A = 0$$

sostituisco nella terza eq. del sistema

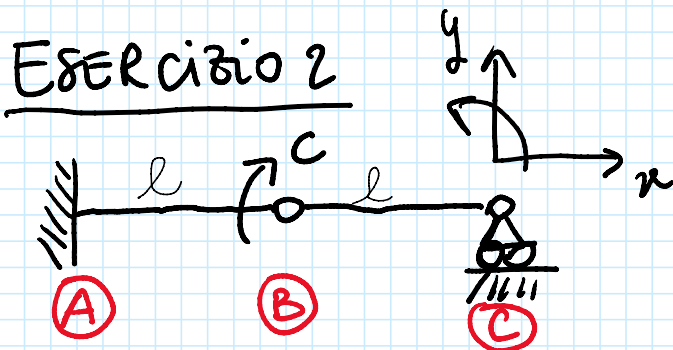
$$V_C = ql$$

$$H_C = 0$$

$$V_A = 0$$



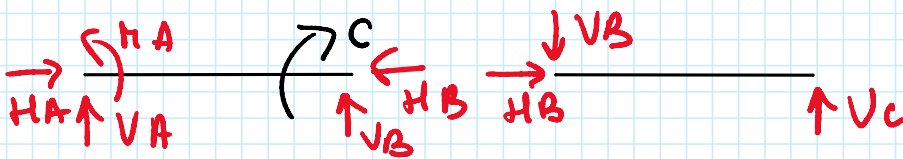
Esercizio 2



2 corpi $\rightarrow 6 g d l$

1 incastro
+
1 cerniera
+
1 carrello
} $\rightarrow 6 g d v$

metodo 1 "struttura esplosa"



eq. corpo AB

$$\begin{cases} H_A - H_B = 0 \\ V_A + V_B = 0 \\ M_A - C + V_B l = 0 \end{cases}$$

$$H_A = 0$$

$$V_A = 0$$

$$M_A = C$$

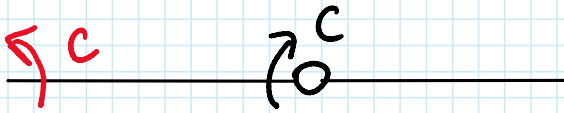
eq. corpo BC

$$\begin{cases} H_B = 0 \\ V_C - V_B = 0 \\ V_C l = 0 \end{cases}$$

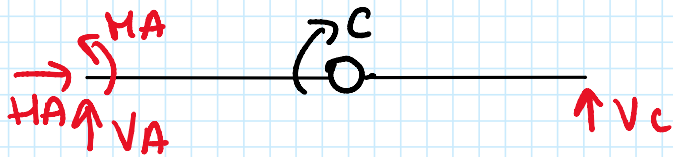
$$V_C = 0$$

$$V_B = 0$$

$$H_B = 0$$



metodo 2 "eq. ausiliaria"

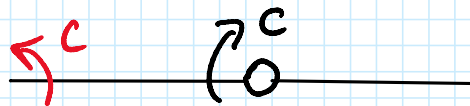


$$\begin{cases} H_A = 0 \\ V_A + V_C = 0 \\ H_A - C + V_C 2l = 0 \end{cases}$$

eq. ausiliaria (eq. di momento)
in B corpo BC

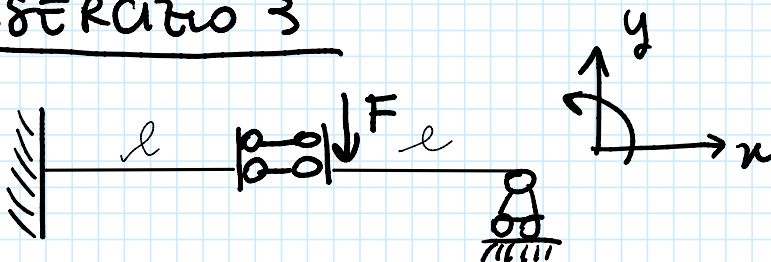
$$V_C l = 0 \rightarrow V_C = 0$$

$$\begin{aligned} H_A &= 0 \\ V_A &= 0 \\ H_A &= C \end{aligned}$$



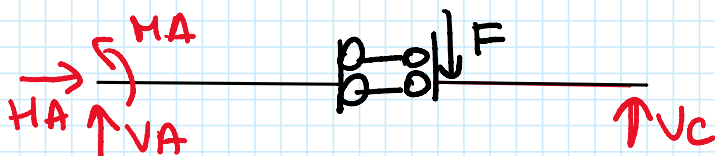
OTTIENGO LA STESSA
SOLUZIONE di PRIMA

ESERCIZIO 3



2 corpi \rightarrow 6 g.d.l.
 1 incastro
 +
 doppia biella
 +
 1 carrello \rightarrow 6 g.d.l.

metodo eq. ausiliaria



$$\begin{cases} H_A = 0 \\ V_A + V_C - F = 0 \\ M_A - Fl + V_C 2l = 0 \end{cases}$$

eq. ausiliaria (traslazione verticale)
Corpo Bc

$$V_C - F = 0 \rightarrow V_C = F$$

$$H_A = 0$$

$$V_A = 0$$

$$M_A = Fl - 2Fl = -Fl$$

SEGNO "-"
DEVO CAMBIARE IL
VERO IPOTIZZATO

