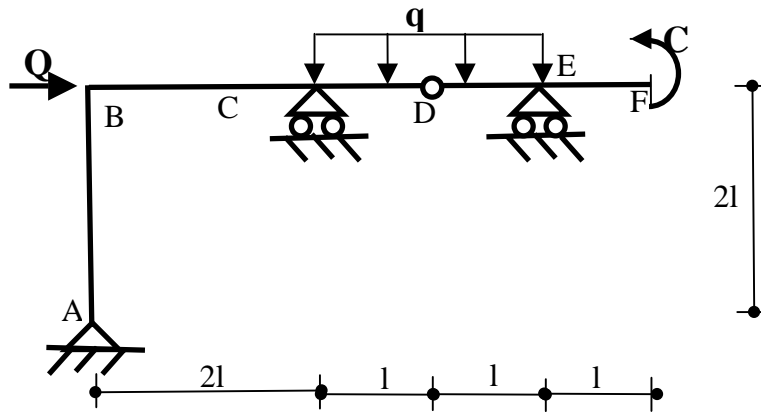
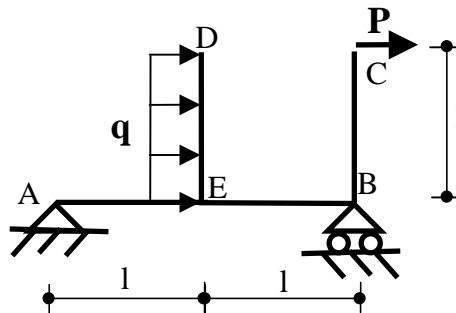


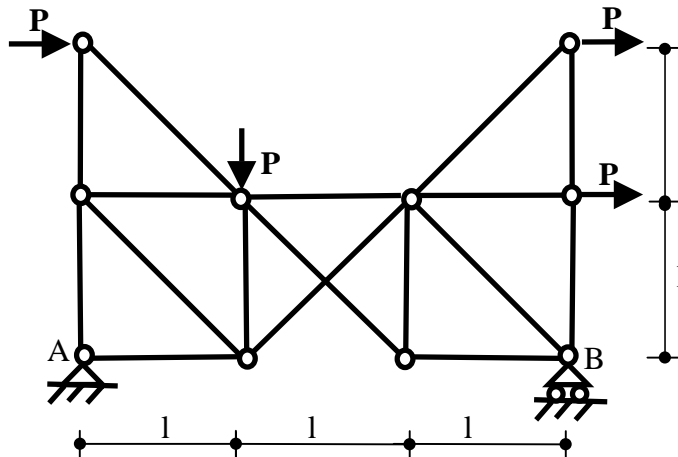
- 1) Disegnare i diagrammi quotati delle azioni interne (N, T, M) per $l=1\text{m}$, $q=2500\text{ kg/m}$, $Q=2ql$, $C=2ql^2$.



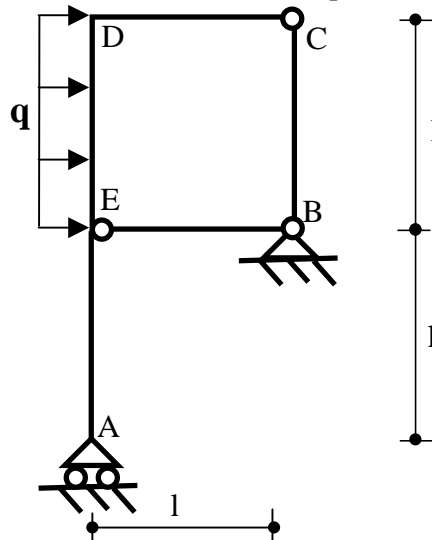
- 2) Disegnare i diagrammi quotati delle azioni interne (N, T, M) per $l=1\text{ m}$, $q= 2500\text{ kg/m}$, $P = 2ql$.

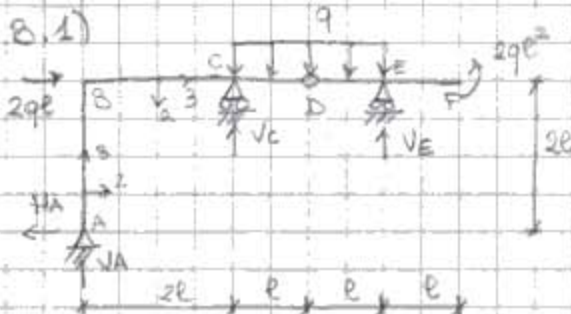


- 3) Calcolare lo stato di sollecitazione per $l=1\text{m}$, $P= 2500\text{ kg}$.



- 4) Disegnare i diagrammi quotati dell'azione interna(N,T,M) per $l=1\text{m}$, $q=2500\text{ kg/m}$.





Eq. me. delle scansioni in D:

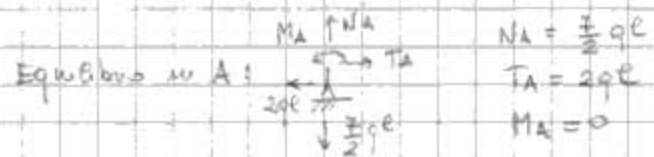
$$(D)_{det} \quad V_{EB} + 2qL^2 - q \frac{L^2}{2} = 0 \rightarrow V_E = -\frac{3}{2}qL$$

Eq. m. cardinali della Stat. ca.:

$$(\rightarrow) \quad H_A = 2qL$$

$$(O) \quad -V_A 2L - 2qL \cdot L - 2qL \cdot L - \frac{3}{2}qL \cdot L + 2qL^2 = 0 \rightarrow V_A = -\frac{7qL}{2}$$

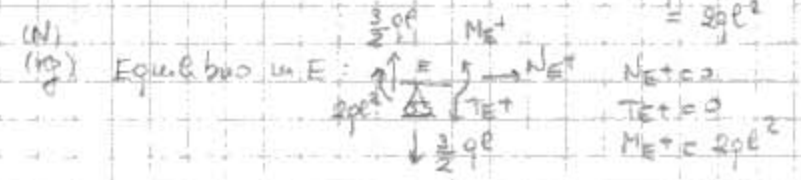
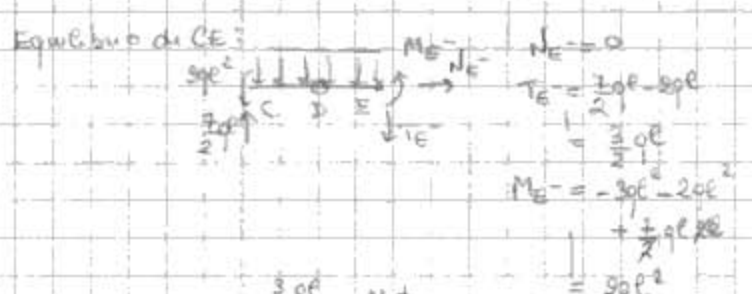
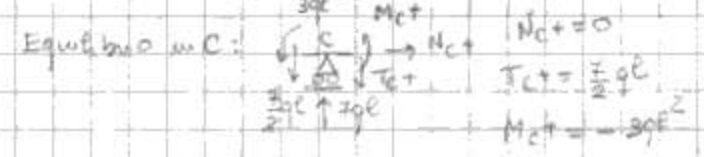
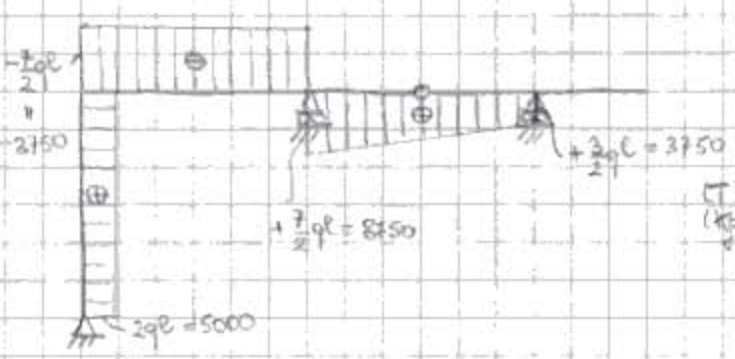
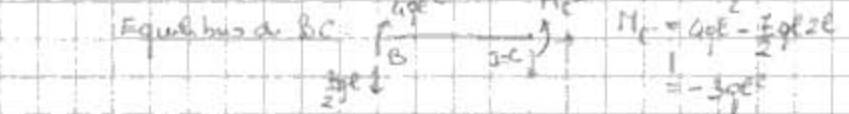
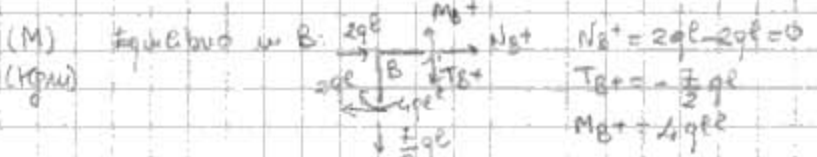
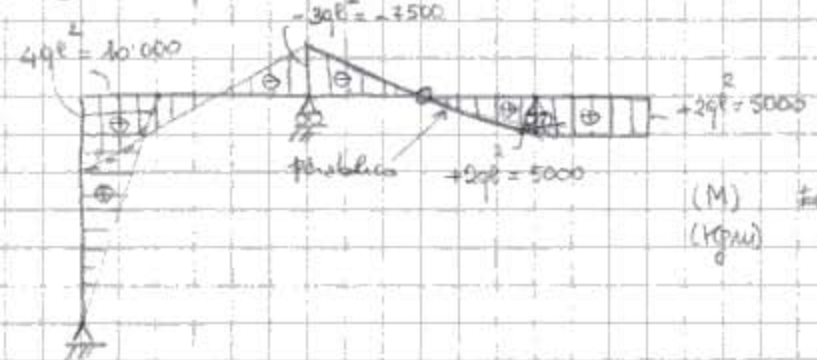
$$(\uparrow) \quad V_C = 2qL + \frac{3}{2}qL + \frac{7}{2}qL = 7qL$$



Equilibrio di AB:

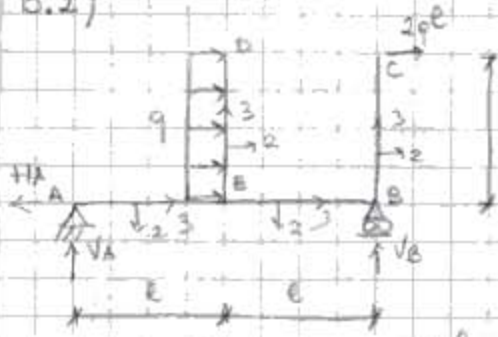
$$M_B = 2qL \cdot 2L = 4qL^2$$

Diagrammi quotati dell'azione interna:



B.2)

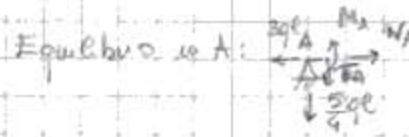
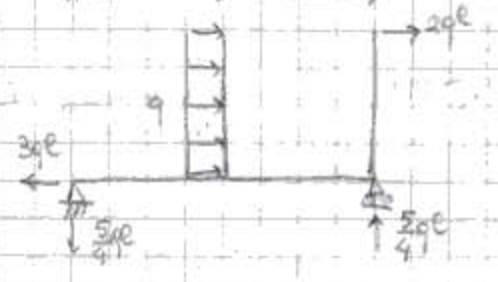
Equilibrio della Statica:



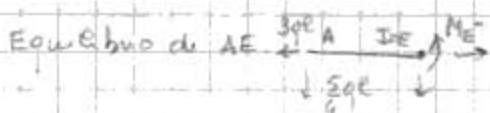
$$\leftarrow \sum H_A = qe + 2qe = 3qe$$

$$\left(\uparrow \right) \sum V_B = qe \frac{2}{2} + 2qe = \frac{5}{2} qe^2 \rightarrow V_B = \frac{5}{4} qe$$

$$\left(\uparrow \right) V_A = -V_B = -\frac{5}{4} qe$$



$$\begin{aligned} N_B &= 3qe \\ T_B &= -\frac{5}{4} qe \\ M_B &= 0 \end{aligned}$$



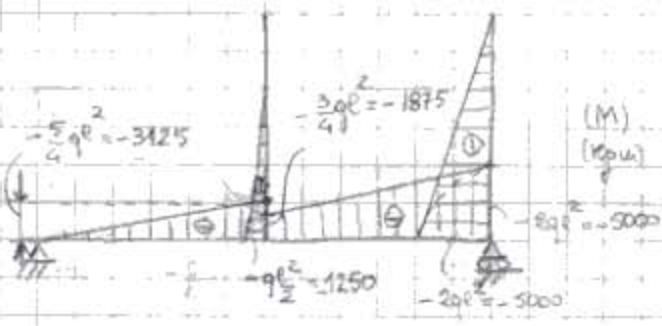
$$M_E^- = -\frac{5}{4} qe^2$$

Diagrammi quotati di (M, T, N):

Equilibrio su D:



$$\begin{aligned} N_D &= 0 \\ T_D &= 0 \\ M_D &= 0 \end{aligned}$$

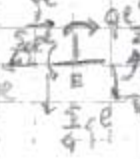


(M) Equilibrio su DE:

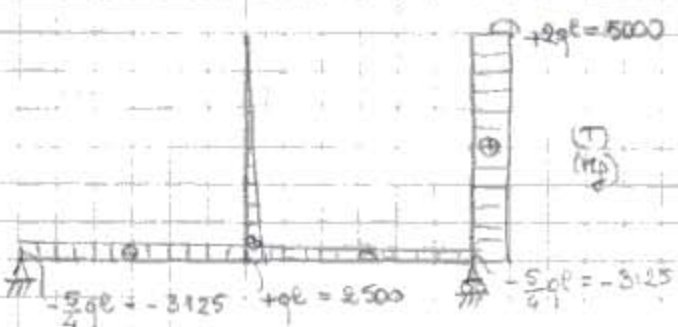


$$\begin{aligned} N_D &= 0 \\ T_D &= qe \\ M_D &= -\frac{qe^2}{2} \end{aligned}$$

Equilibrio su E:



$$\begin{aligned} N_E^+ &= 3qe - qe = 2qe \\ T_E^+ &= -\frac{5}{4} qe \\ M_E^+ &= \frac{qe^2}{2} - \frac{5}{4} qe^2 = -\frac{3}{4} qe^2 \end{aligned}$$

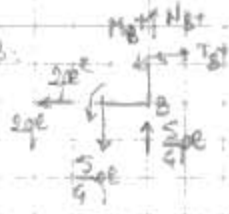


Equilibrio su EB:

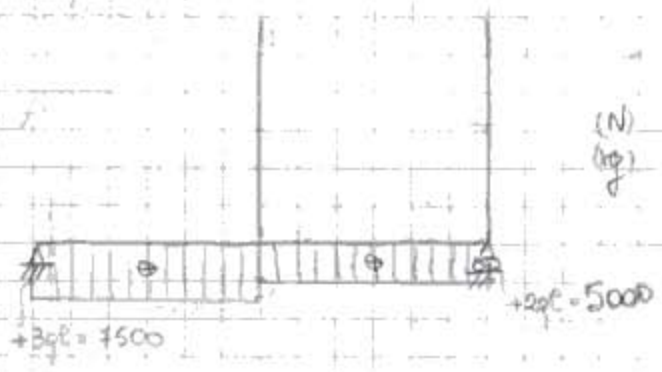


$$\begin{aligned} N_B^- &= 2qe \\ T_B^- &= -\frac{5}{4} qe^2 \\ M_B^- &= -\frac{3}{4} qe^2 - \frac{5}{4} qe^2 = -2qe^2 \end{aligned}$$

Equilibrio su B:

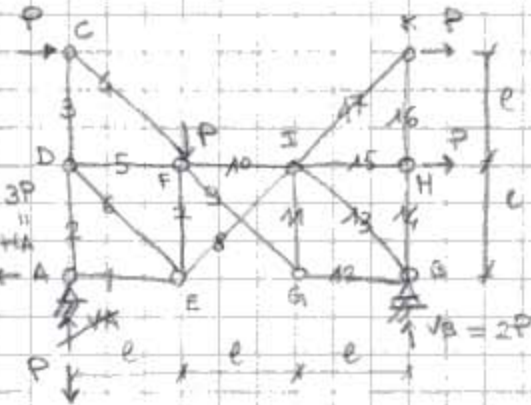


$$\begin{aligned} N_B^+ &= 0 \\ T_B^+ &= 2qe \\ M_B^+ &= -2qe^2 \end{aligned}$$



(N)

B.3)

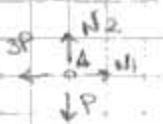


$(\rightarrow) H_A = 3P$

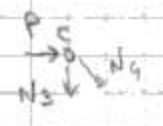
$(A) \quad \sum \mathcal{M}_B = (3P + 2P)e \cdot 2 = 6Pe \rightarrow V_B = 2P$

$(\uparrow) V_A = P - 2P = -P$

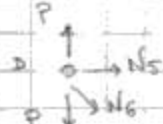
Metodo dell'equilibrio ai nodi



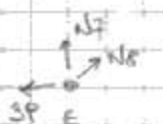
$N_1 = 3P$
 $N_2 = P$



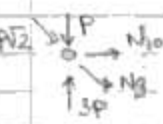
$N_4 \frac{\sqrt{2}}{2} = -P$
 $N_5 = -N_4 \frac{\sqrt{2}}{2} = P$



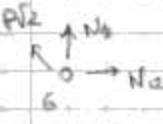
$N_5 = 0$
 $N_6 = 0$



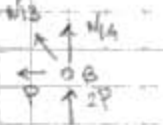
$N_8 \frac{\sqrt{2}}{2} = 3P$
 $N_7 = -N_8 \frac{\sqrt{2}}{2} = -3P$



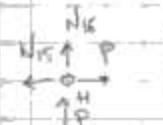
$N_9 \frac{\sqrt{2}}{2} = -P + 3P - P \frac{\sqrt{2}}{2} = P$
 $N_{10} = -P \frac{\sqrt{2}}{2} - N_9 \frac{\sqrt{2}}{2} = -2P$



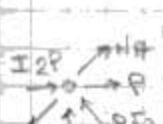
$N_{12} = P \frac{\sqrt{2}}{2} = P$
 $N_{11} = -P \frac{\sqrt{2}}{2} = -P$



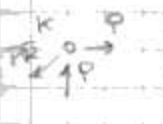
$N_{13} \frac{\sqrt{2}}{2} = -P$
 $N_{14} = -2P - N_{13} \frac{\sqrt{2}}{2} = -P$



$N_{15} = P$
 $N_{16} = -P$

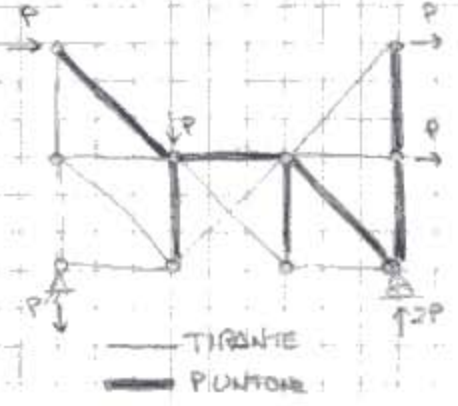


$(\rightarrow) N_{17} \frac{\sqrt{2}}{2} = -P - 2P + P \frac{\sqrt{2}}{2} + 3P \frac{\sqrt{2}}{2} = P$
 $(\uparrow) P + P + P \frac{\sqrt{2}}{2} - 3P \frac{\sqrt{2}}{2} = 0$

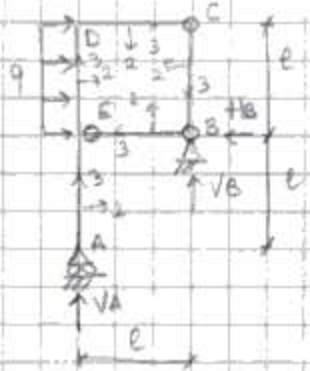


$P \frac{\sqrt{2}}{2} = P$
 $P \frac{\sqrt{2}}{2} = P$

ASTA	N	kg	
1	3P	7500	T
2	P	2500	T
3	P	2500	T
4	$P \frac{\sqrt{2}}$	3535	P
5	0	0	
6	0	0	
7	-3P	-7500	P
8	$3P \frac{\sqrt{2}}$	10606	T
9	$P \frac{\sqrt{2}}$	3535	T
10	-2P	-5000	P
11	-P	-2500	P
12	P	2500	T
13	$P \frac{\sqrt{2}}$	3535	P
14	-P	-2500	P
15	P	2500	T
16	-P	-2500	P
17	$P \frac{\sqrt{2}}$	3535	T

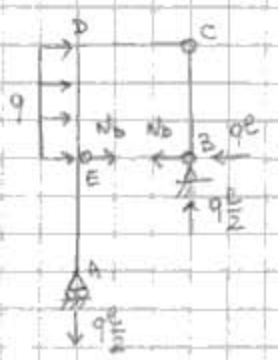


B.4) Equi condizionali della Statica:



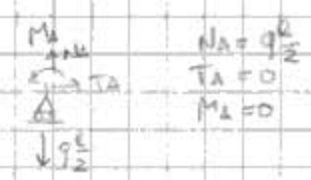
$(\rightarrow) H_B = qe$
 $(\uparrow) V_B = qe \frac{e}{2} \rightarrow V_B = \frac{qe^2}{2}$
 $(\uparrow) V_A = -V_B = -\frac{qe^2}{2}$

Equi. della sommersione in C:



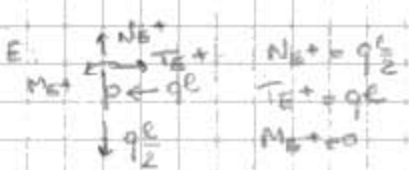
$(\leftarrow)_{ac} N_B e + qe^2 = 0 \rightarrow N_B = -qe = -2500 \text{ kg}$

Equilibrio in A:



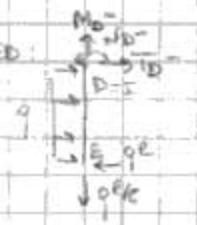
$N_A = \frac{qe}{2}$
 $T_A = 0$
 $M_A = 0$

Equilibrio in E:



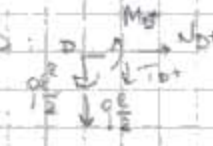
$N_E = \frac{qe}{2}$
 $T_E = qe$
 $M_E = 0$

Equilibrio in ED:



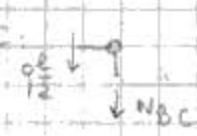
$T_D = 0$
 $M_D = qe^2 \frac{e}{3} = \frac{qe^3}{3}$

Equilibrio in D:



$N_D = 0$
 $T_D = -\frac{qe^2}{2}$
 $M_D = \frac{qe^3}{2}$

Equilibrio in C:



$N_{BC} = -\frac{qe}{2}$

Diagrammi qualitativi delle azioni interne:

