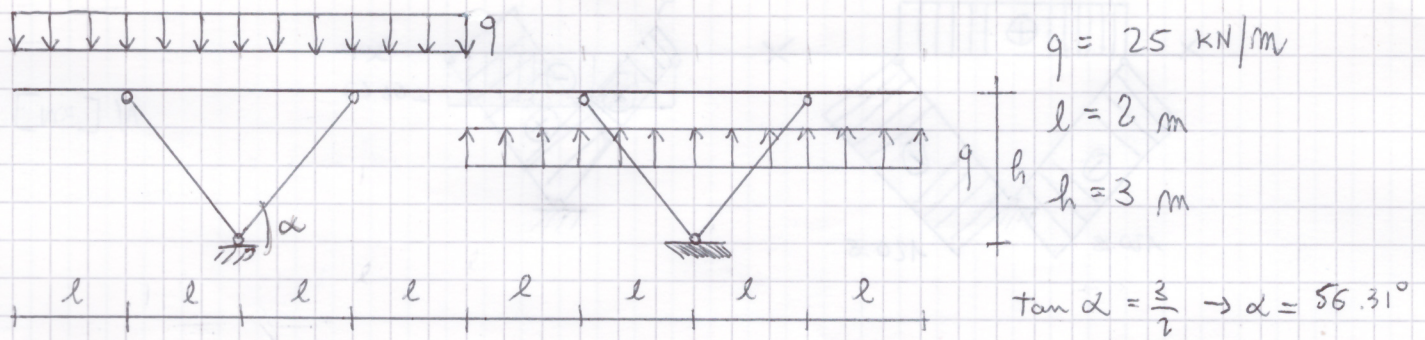
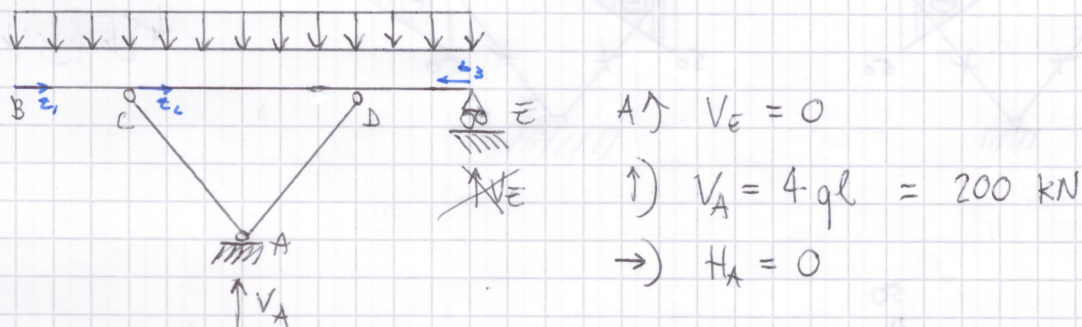
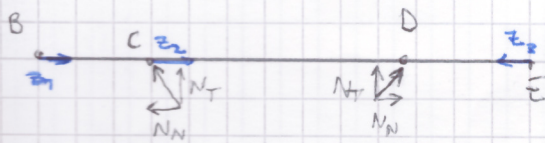
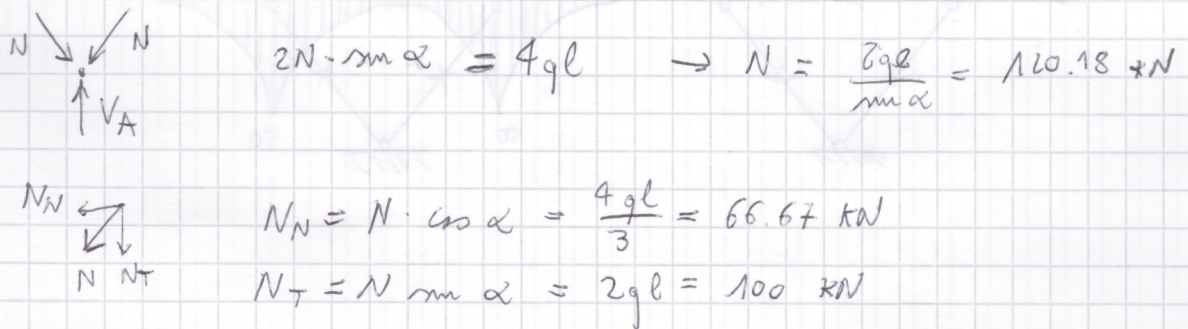




Struttura antisimmetrica



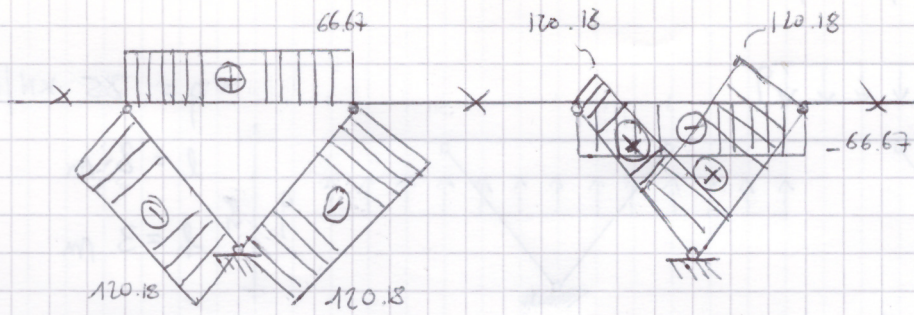
Nodo A



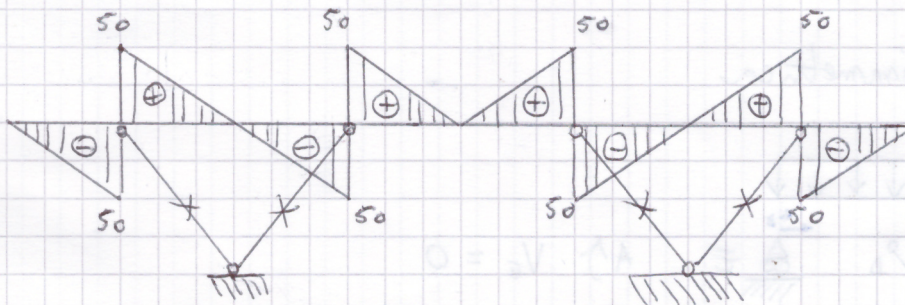
Asta BC $N(z_1) = 0$ $T(z_1) = -qz_1$ $M(z_1) = -\frac{qz_1^2}{2}$

Asta CD $N(z_2) = N_N = 66.67 \text{ kN}$ $T(z_2) = -qz_2 - ql + N_T$
 $M(z_2) = -\frac{q(l+z_2)^2}{2} + N_T z_2$

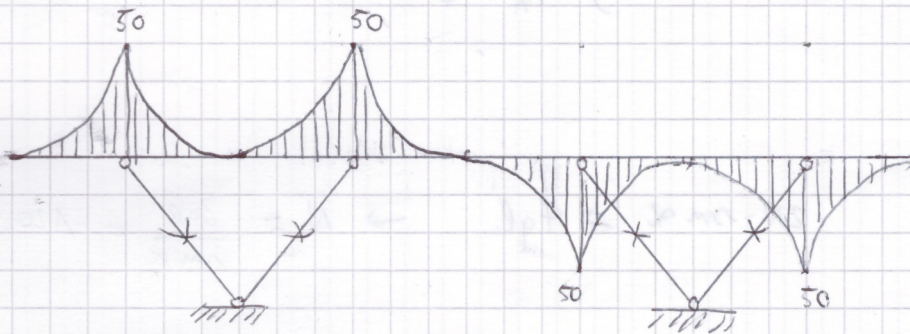
Asta ED $N(z_3) = 0$ $T(z_3) = qz_3$ $M(z_3) = -\frac{qz_3^2}{2}$



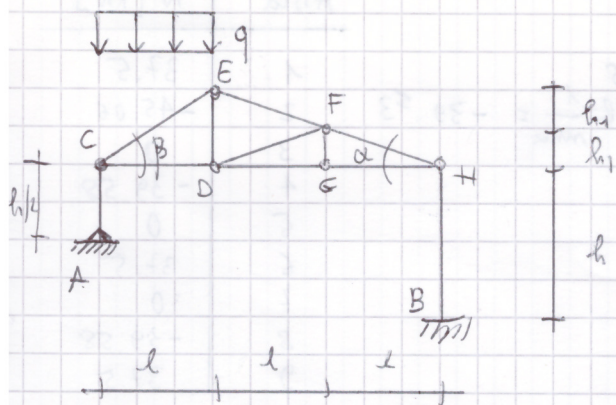
N [kN]



T [kN]



M [kNm]



$$q = 25 \text{ kN/m}$$

$$h_1 = 1 \text{ m}$$

$$l = 3 \text{ m}$$

$$h = 4 \text{ m}$$

$$\alpha = \arctg\left(\frac{h_1}{l}\right) = \arctg\left(\frac{1}{3}\right) = 18.43^\circ$$

$$\beta = \arctg\left(\frac{2h_1}{l}\right) = \arctg\left(\frac{2}{3}\right) = 33.69^\circ$$

$$\rightarrow H_A = 0 \rightarrow H_B = 0$$

$$\rightarrow M_B = 0$$

$$\uparrow V_A + V_B = ql$$

$$V_B = ql - \frac{5}{6}ql = \frac{1}{6}ql = 12.5 \text{ kN}$$

$$\rightarrow V_A \cdot 3l - ql\left(2l + \frac{l}{2}\right) = 0 \rightarrow V_A = \frac{1}{3} \cdot \frac{5}{2}ql = \frac{5}{6}ql = 62.5 \text{ kN}$$

Sollentamoni pilastri

Asta BH

$$N(z) = -\frac{1}{6}ql = 12.5 \text{ kN}$$

$$T(z) = 0$$

$$M(z) = 0$$

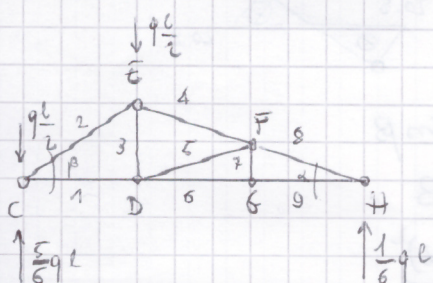
Asta AC

$$N(z) = -\frac{5}{6}ql = 62.5 \text{ kN}$$

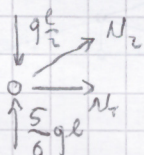
$$T(z) = 0$$

$$M(z) = 0$$

Stato PRIMARIO RETICOLARE



Nodo C



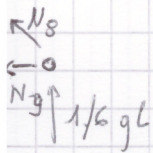
$$N_1 + N_2 \cos \beta = 0$$

$$N_2 \sin \beta + \frac{1}{3}ql = 0$$

$$N_1 = 37.5 \text{ kN}$$

$$N_2 = -\frac{1}{3}ql \cdot \frac{1}{\sin \beta} = -45.06 \text{ kN}$$

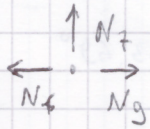
Nodo H



$$\begin{aligned} -N_8 \cos \alpha - N_9 &= 0 & N_9 &= 37.5 \\ N_8 \sin \alpha - \frac{1}{6} qL &= 0 & N_8 &= -\frac{1}{6} qL \frac{1}{\sin \alpha} = -39.53 \end{aligned}$$

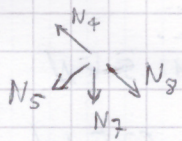
Arco	N [kN]
1	37.5
2	-45.06
3	0
4	-39.58
5	0
6	37.5
7	0
8	-39.58
9	37.5

Nodo G



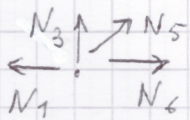
$$\begin{aligned} N_7 &= 0 \\ N_6 &= N_9 \end{aligned}$$

Nodo F

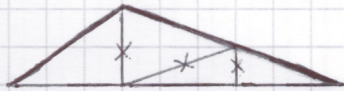


$$\begin{aligned} N_7 &= 0 \\ N_8 \cos \alpha - N_4 \cos \alpha - N_5 \cos \alpha &= 0 \\ N_8 \sin \alpha + N_4 \sin \alpha - N_5 &= 0 \end{aligned} \quad \rightarrow \quad \begin{aligned} N_4 &= N_8 \\ N_5 &= 0 \end{aligned}$$

Nodo D

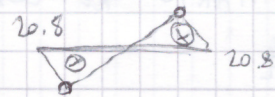
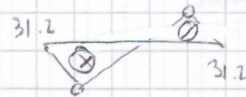
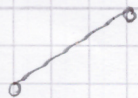


$$\begin{aligned} N_5 &= 0 \\ N_1 &= N_6 \\ N_3 &= 0 \end{aligned}$$



— aste in compressione
— aste in trazione

STATO SECONDARIO



$$N(z) = -q \frac{z}{L} \cos \beta + q z \sin \beta \cos \beta$$

$$T(z) = -q \frac{z}{L} \sin \beta + q z \sin^2 \beta$$

$$M(z) = -q \frac{z}{L} z \sin \beta + \frac{q(z \sin \alpha)^2}{2}$$

