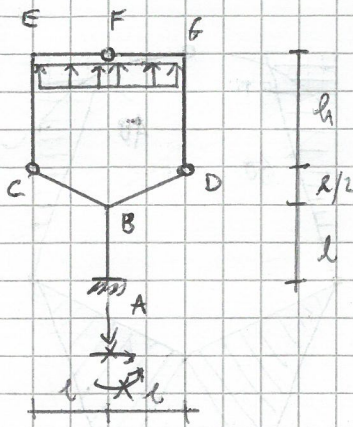




$$l = 2 \text{ m}$$

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

$$q = 20 \text{ kN/m}$$

$$\alpha = \arctg\left(\frac{l/2}{e}\right) = 26.6^\circ$$

Reazioni vincolari

$$H_A = 0$$

$$M_A = 0$$

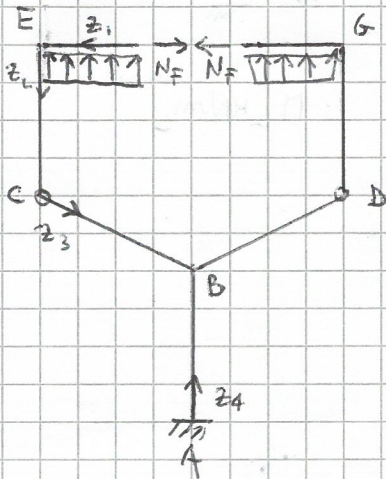
$$V_A = 2ql = 80 \text{ kN}$$

Aperto in F

$T_F = 0$ per simmetria

$$\sum + q \frac{l}{2} l - N_F h = 0$$

$$N_F = q \frac{l}{2} l \cdot \frac{1}{h} = 13.3 \text{ kN}$$



Tratto EF

$$N(z_1) = 13.3 \text{ kN}$$

$$T(z_1) = -qz$$

$$M(z_1) = q \frac{z^2}{2}$$

Tratto EC

$$N(z_2) = 40 \text{ kN}$$

$$T(z_2) = +13.3 \text{ kN}$$

$$M(z_2) = 40 - 13.3 z_2$$

Tratto CB

$$N(z_3) = 40 \text{ m} \alpha + 13.3 \text{ m} \alpha$$

$$T(z_3) = 40 \text{ m} \alpha + 13.3 \text{ m} \alpha$$

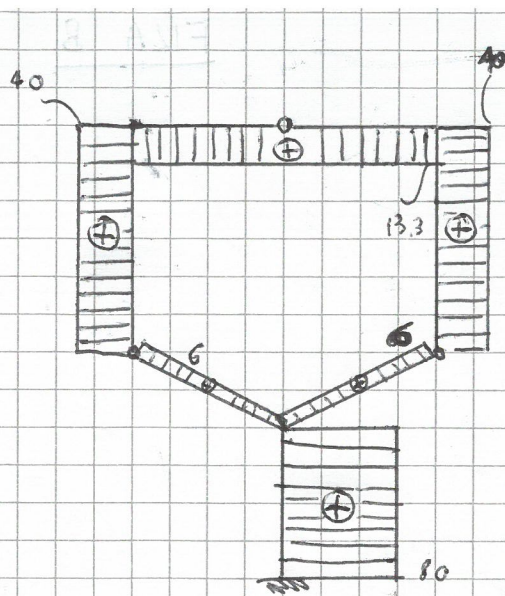
$$M(z_3) = -40 \text{ m} \alpha z - 13.3 \text{ m} \alpha z$$

Tratto AB

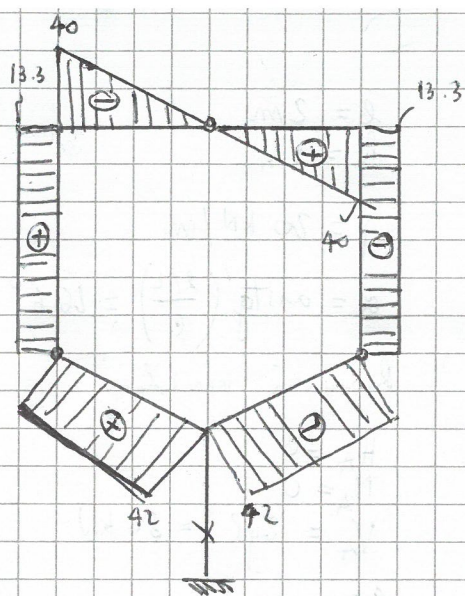
$$N(z_4) = 80 \text{ kN}$$

$$T(z_4) = 0$$

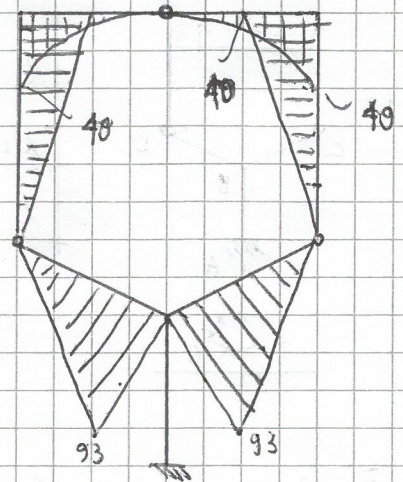
$$M(z_4) = 0$$



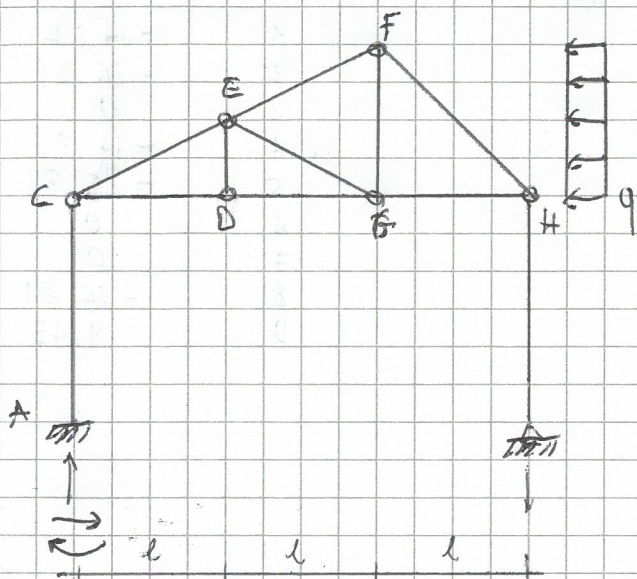
$N [kN]$



$T [kN]$



$M [kNm]$



$$q = 20 \text{ kN/m}$$

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

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

$$l = 2 \text{ m}$$

$$\alpha = \arctan\left(\frac{h_1}{l}\right) = 26.6^\circ$$

$$\beta = \arctan\left(\frac{l}{h}\right) = 45^\circ$$

$$H) H_B = 0 \rightarrow H_A = 2qh_1 = 40 \text{ kN}$$

$$C) -M_A + H_A h = 0 \rightarrow M_A = 120 \text{ kN/m}$$

$$A) V_B \cdot 3l + q(2h_1) \cdot (h_1 + h) - M_A = 0 \rightarrow V_B = -6.67 \text{ kN}$$

$$A) V_A + V_B = 0 \rightarrow V_A = 6.67 \text{ kN}$$

Tratto AC

$$N(z) = -6.67 \text{ kN}$$

$$T(z) = -40 \text{ kN}$$

$$M(z) = 120 - 40z$$

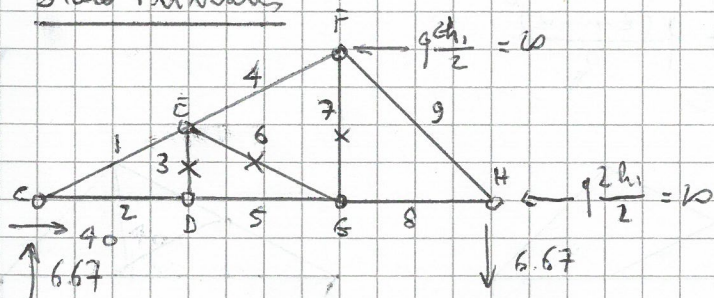
Tratto BH

$$N(z) = 6.67 \text{ kN}$$

$$T = 0$$

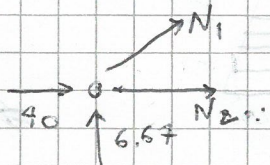
$$M = 0$$

Stato Principali



$$N_3 = 0 \rightarrow N_6 = 0 \rightarrow N_7 = 0$$

Nodo C



$$\begin{cases} N_1 \cos \alpha + N_2 + 40 = 0 \\ N_1 \sin \alpha + 6.67 = 0 \end{cases}$$

$$\begin{aligned} N_2 &= -26.81 \text{ kN} \\ N_1 &= -14.82 \text{ kN} \end{aligned}$$

Nodo D



$$N_2 = N_5$$

$$N_5 = -26.81 \text{ kN}$$

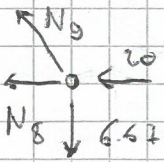
Nodo E



$$N_1 = N_4$$

$$N_4 = -14.82 \text{ kN}$$

Nodo H



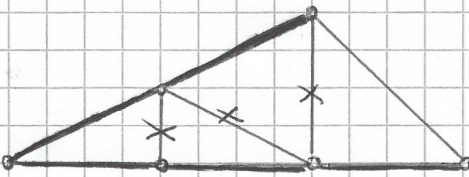
$$-N_8 - 20 - N_9 \cos \alpha = 0$$

$$N_9 \sin \alpha - 6.67 = 0$$

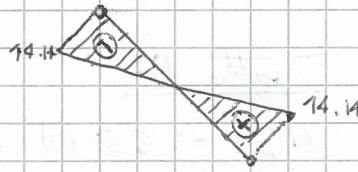
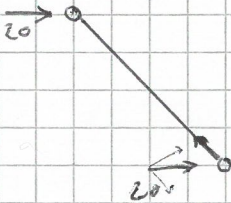
$$N_9 = 2.43 \text{ kN}$$

$$N_8 = -26.81 \text{ kN}$$

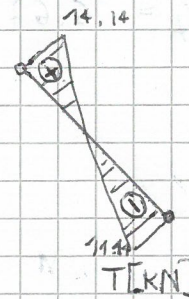
Arco	N [kN]
1	-14.82
2	-26.81
3	0
4	-14.82
5	-26.81
6	0
7	0
8	-26.81
9	9.43



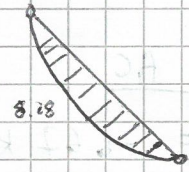
Stato secondario



N [kN]



T [kN]

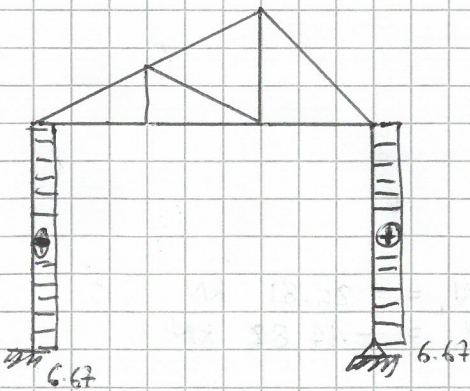


M [kN.m]

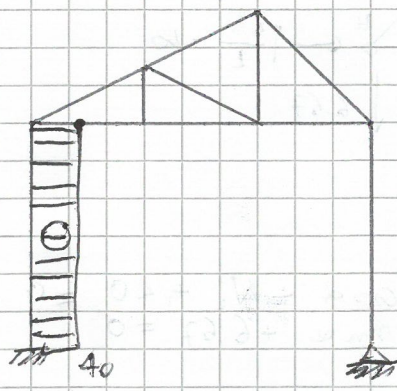
$$N(z) = +20 \cos \alpha + qz \sin \alpha \cos \alpha$$

$$T(z) = -20 \sin \alpha + qz \sin^2 \alpha$$

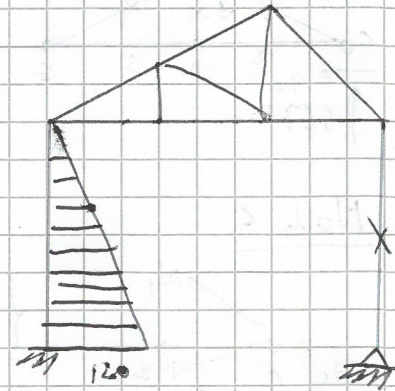
$$M(z) = +20 z \sin \alpha + q \frac{(z \sin \alpha)^2}{2}$$



N [kN]



T [kN]



M [kN.m]