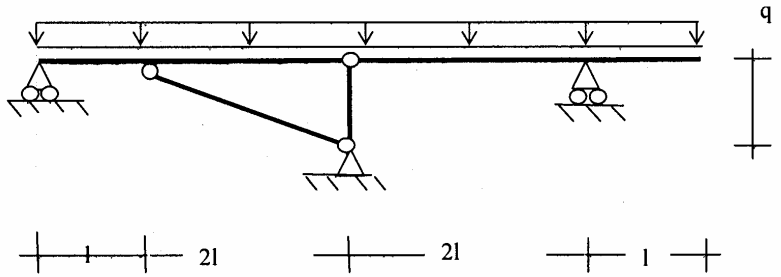
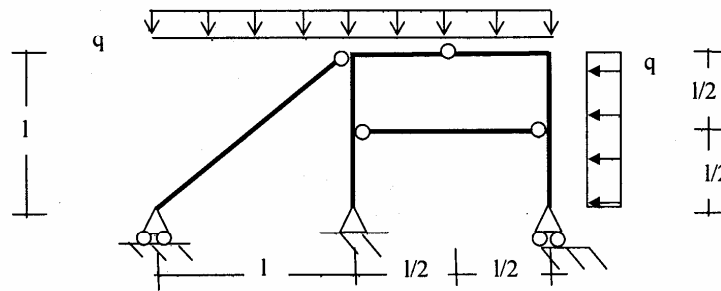


1) Disegnare i diagrammi quotati di N,T,M per $q=1000 \text{ kg/m}$, $l=2 \text{ m}$.



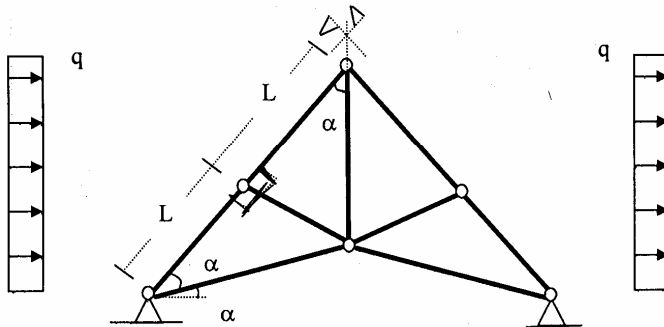
$450 - 1250 +$
 $+ 450$
 $3600 / 8$

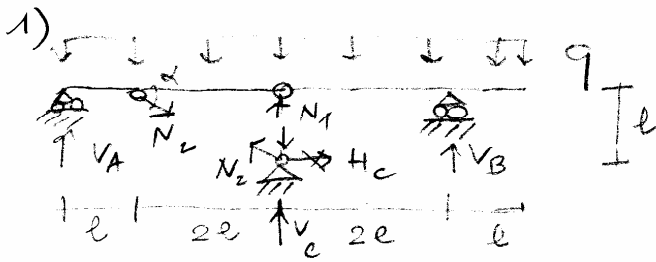
2) Disegnare i diagrammi quotati di N,T,M per $q=100 \text{ kg/m}$, $l=6 \text{ m}$.



$650 -$

3) Determinare lo stato di sollecitazione primario (con tabella riassuntiva degli sforzi normali) e secondario della struttura in figura per $L=1.5 \text{ m}$, $q=100 \text{ kg/m}$, $\alpha=30^\circ$





$$q = 1000 \text{ kg/m}$$

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

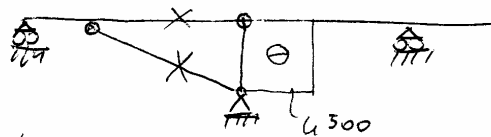
$$H_c = 0$$

$$V_B = \frac{1}{2l} q \cdot 3l^2 \cdot \frac{3}{2} = \frac{9}{4} ql = 4500 \text{ kg}$$

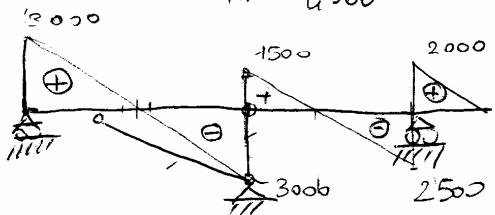
$$\tan \alpha = 1/2$$

$$\cos \alpha = \frac{2}{\sqrt{5}} = 2/\sqrt{5}$$

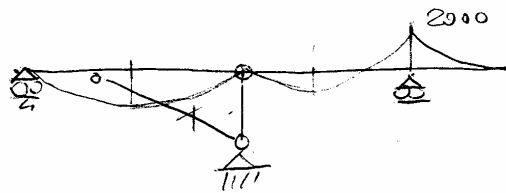
$$\sin \alpha = 1/\sqrt{5}$$



(N)



(T)



(M)

$$-N_A \cdot 3l + \frac{3}{4} ql \cdot 2l = 0$$

$$V_A = \frac{3}{2} ql = 3000 \text{ kg}$$

$$N_2 \cdot 2l \sin \alpha - \frac{3}{2} ql \cdot 3l$$

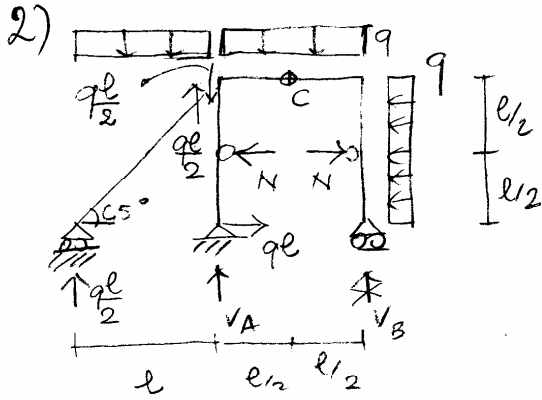
$$+ \frac{3}{2} ql^2 = 0 \Rightarrow N_2 = 0$$

$$N_1 = V_C = 6ql - \frac{3}{2} ql - \frac{3}{4} ql$$

$$= 6ql - \frac{15}{4} ql$$

$$= +\frac{9}{4} ql$$

$$= +4500 \text{ kg}$$



$$q = 100 \text{ kg/m}$$

$$l = 6 \text{ m}$$

$$\sum \uparrow - V_A l + q \frac{l^2}{2} + q \frac{l^2}{2} + q \frac{l^2}{2} = 0$$

$$V_A = \frac{3}{2} q l = 900 \text{ kg}$$

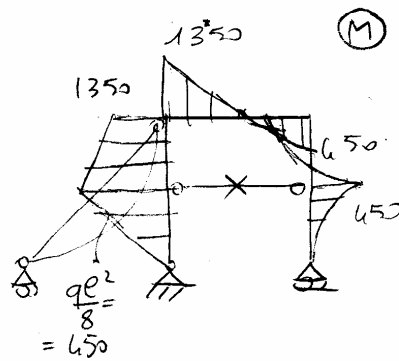
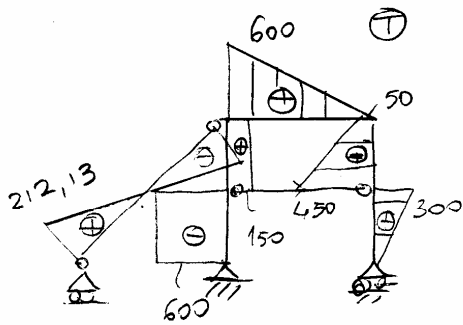
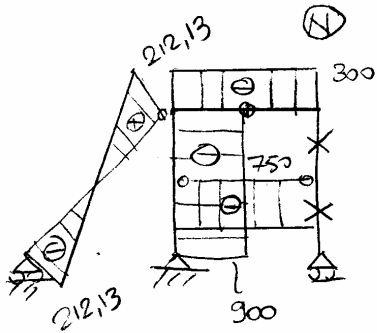
$$V_B = q \frac{l}{2} + q l - \frac{3}{2} q l = 0$$

$$\sum \rightarrow - q \frac{l^2}{2} + N \frac{l}{2} - q \frac{l^2}{8} = 0$$

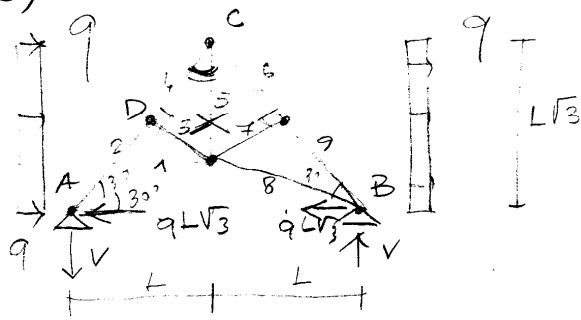
$$N = \frac{5}{4} q l = 750 \text{ kg}$$

check

$$\sum \rightarrow - \frac{3}{2} q l \cdot \frac{l}{2} - \frac{5}{4} q l \cdot \frac{l}{2} + q \frac{l^2}{4} + q \frac{l^2}{8} + q l \frac{l}{2} = 0 \text{ ok}$$

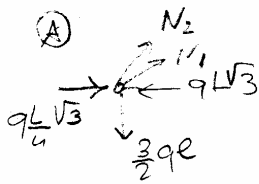


3)



$q = 100 \text{ kg/m}$
 $L = 1,5 \text{ m}$ $\alpha = 30^\circ$
 $V_{2L} = 2q \cdot L\sqrt{3} \cdot \frac{L\sqrt{3}}{2} \Rightarrow V = \frac{3}{2}qL$

(C)
 $qL\sqrt{3} \rightarrow$ $qL\sqrt{3}$
 $N_4 = N_5$ $N_4 = N_5$
 $N_5 = 0$
 $2 \cdot N_4 \cdot \frac{1}{2} = \frac{2qL\sqrt{3}}{2}$
 $N_4 = -\frac{qL\sqrt{3}}{2}$ (Anrede)



$$\begin{cases} N_2 \frac{1}{2} + N_1 \frac{\sqrt{3}}{2} = \frac{3}{4}qL\sqrt{3} \\ N_2 \frac{\sqrt{3}}{2} + N_1 \frac{1}{2} = \frac{3}{2}qL \end{cases}$$

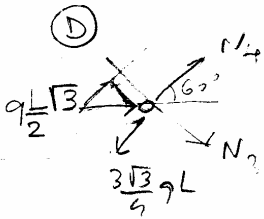
$$\begin{cases} N_2 + N_1\sqrt{3} = \frac{3}{4}qL\sqrt{3} \rightarrow \sqrt{3}N_2 + 3N_1 = \frac{3}{2}qL \\ N_2\sqrt{3} + N_1 = \frac{3}{2}qL \end{cases}$$

$2N_1 = (\frac{3}{2} - 3)qL = -\frac{3}{2}qL \Rightarrow N_1 = -\frac{3}{4}qL$

$N_2 = \frac{3}{2}qL - 3\sqrt{3} \cdot (-\frac{3}{4}qL) = \frac{30\sqrt{3}}{4}qL$

$\rightarrow N_3 - 3\sqrt{3}qL + qL\sqrt{3} = 0 \Rightarrow N_3 = +\frac{\sqrt{3}}{2}qL$

$N_4 = qL\sqrt{3} \cdot \frac{1}{2} = \frac{3}{4}qL$



1	112,5
2	196,85
3	112,5
4	130
5	0
6	-130
7	-112,5
8	-112,5
9	-584,57