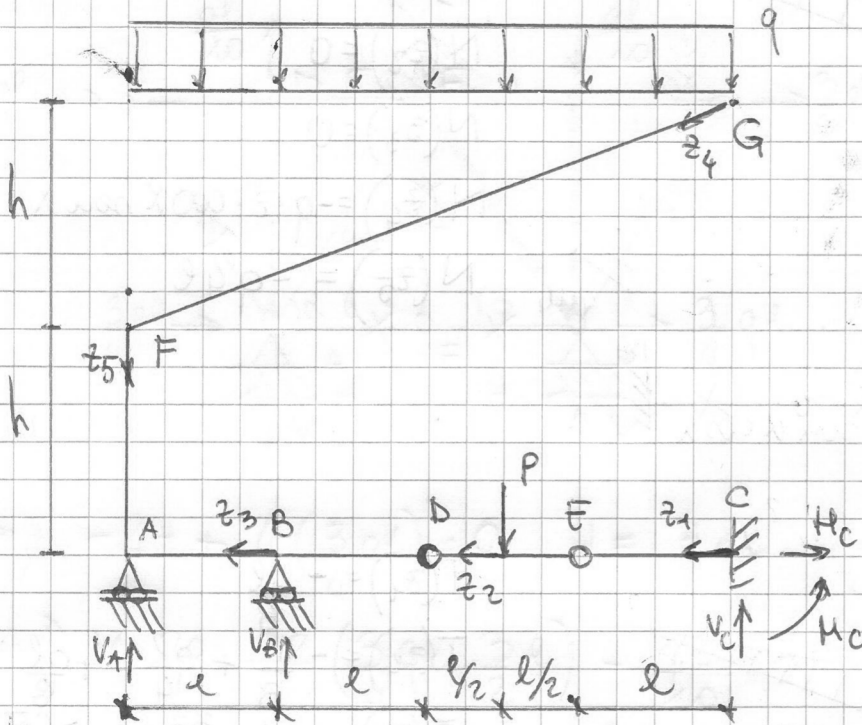


1)



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

$$P = 500 \text{ N} = \frac{ql}{4}$$

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

$$H = 3 \text{ m} = \frac{3}{2} l$$

$$\tan \alpha = \frac{3}{4}$$

$$\alpha = 36,87^\circ$$

D) AUS

$$-\frac{ql}{4} \cdot \frac{l}{2} + V_c \cdot 2l + M_c = 0$$

E) AUS

$$V_c \cdot l + M_c = 0$$

$$\Rightarrow -\frac{ql^2}{8} + V_c \cdot l = 0$$

$$V_c = \frac{ql}{8}$$

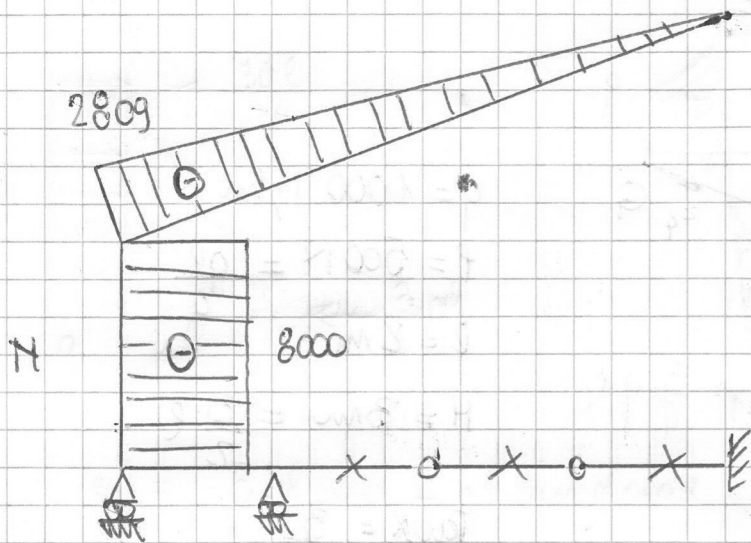
$$M_c = -\frac{ql^2}{16}$$

$$A) -4ql \cdot 2l + V_B \cdot l - \frac{ql}{4} \cdot \frac{5l}{2} + \frac{ql}{8} \cdot 4l - \frac{ql^2}{8} = 0$$

$$V_B = 8ql + \frac{5}{8}ql - \frac{ql}{2} + \frac{ql}{8} = \frac{33}{4}ql$$

$$\uparrow) -4ql + V_A + \frac{33}{4}ql - \frac{ql}{4} + \frac{ql}{8} = 0$$

$$V_A = 4ql - \frac{33}{4}ql + \frac{ql}{4} - \frac{ql}{8} = \frac{33}{8}ql$$



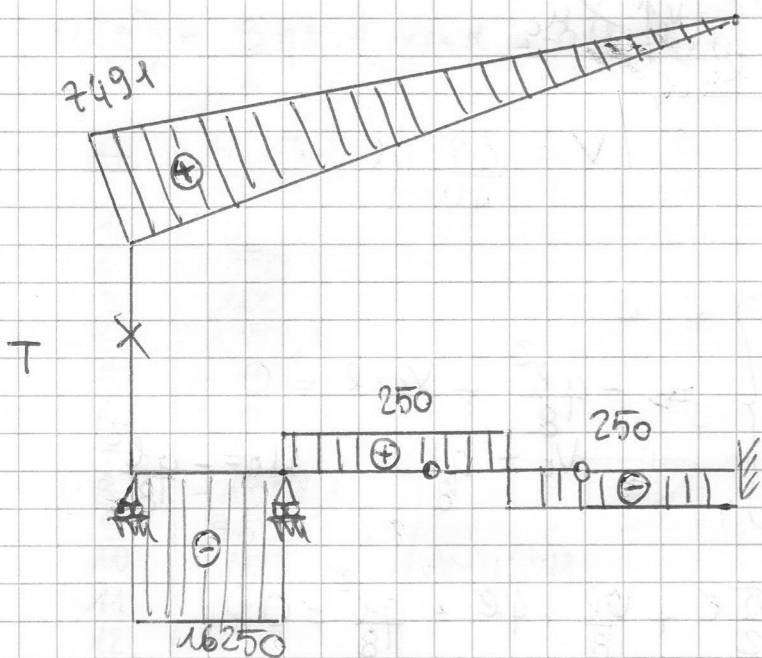
$$N(z_1) = 0$$

$$N(z_2) = 0$$

$$N(z_3) = 0$$

$$N(z_4) = -q \cdot z \cdot \cos \alpha \text{ nem } x$$

$$N(z_5) = -q \cdot l$$



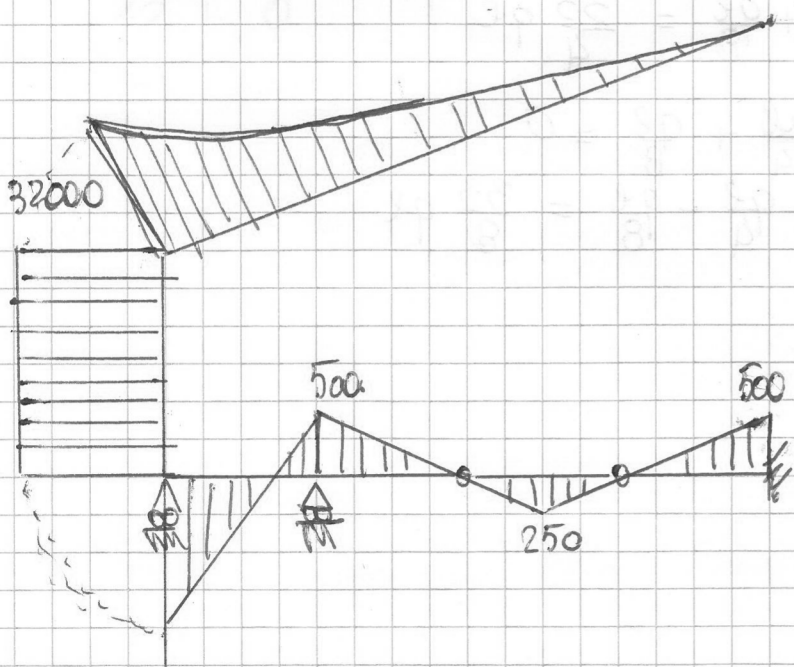
$$T(z_1) = -\frac{ql}{8}$$

$$T(z_2) = -\frac{ql}{8} + \frac{ql}{4} = +\frac{ql}{8}$$

$$T(z_3) = \frac{ql}{8} - \frac{33}{4}ql = -\frac{65}{8}ql$$

$$T(z_4) = ql \cos^2 \alpha$$

$$T(z_5) = 0$$



$$M(z_1) = -\frac{ql^2}{8} + \frac{ql}{8}z$$

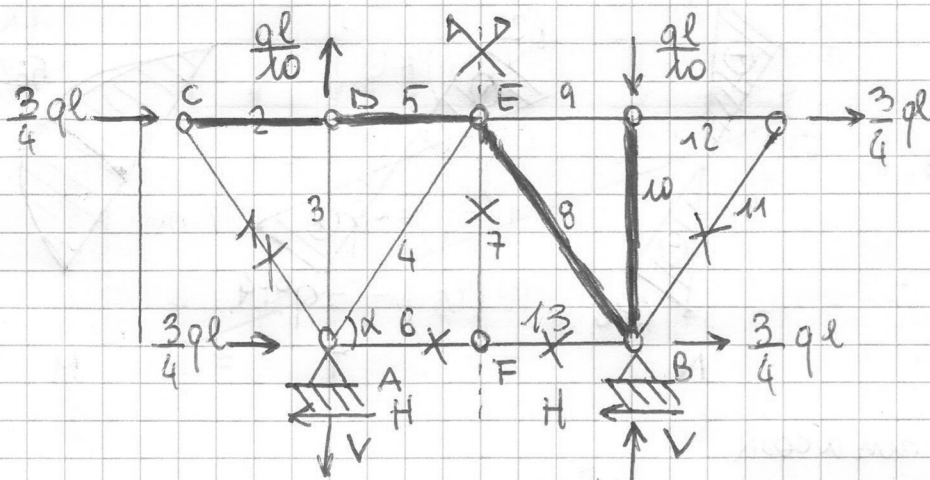
$$M(z_2) = -\frac{ql^2}{8} + \frac{ql}{8}\left(\frac{3l+z}{2}\right) - \frac{ql}{4}z$$

$$M(z_3) = -\frac{ql}{8} + \frac{ql}{8}(3l+z) - \frac{ql}{4}\left(\frac{3l+z}{2}\right) + \frac{33}{4}qlz$$

$$M(z_4) = q(z \cos \alpha)^2$$

$$M(z_5) = -4ql \cdot 2l$$

2) STATO PRIMARIO



$$q = 500 \text{ N/m}$$

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

$$H = 3 \text{ m} = \frac{3}{2} l$$

$$P = 100 \text{ N} = \frac{ql}{10}$$

$$\tan \alpha = \frac{3}{2}$$

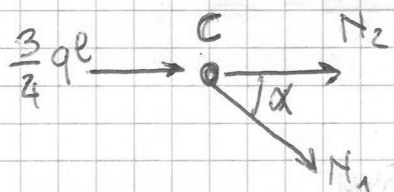
$$\alpha = 56,31^\circ$$

$$\rightarrow) -2H + 4\left(\frac{3}{4}ql\right) = 0 \quad H = \frac{3}{2}ql$$

$$A \uparrow V \cdot 2l - 2\left(\frac{3}{4}ql \cdot \frac{3}{2}l\right) - \frac{ql}{10} \cdot 2l = 0$$

$$V \cdot 2l = \frac{9}{4}ql^2 + \frac{ql^2}{5} \quad V = \frac{49}{40}ql$$

NODO C

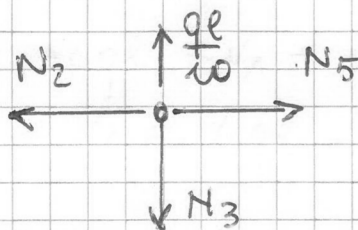


$$\uparrow) N_1 = 0$$

$$\rightarrow) N_2 + \frac{3}{4}ql = 0$$

$$N_2 = -\frac{3}{4}ql = -750 \text{ N}$$

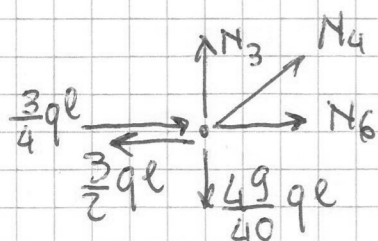
NODO D



$$\uparrow) \frac{ql}{10} - N_3 = 0 \quad N_3 = \frac{ql}{10} = 100 \text{ N}$$

$$\rightarrow) N_5 - N_2 = 0 \quad N_5 = N_2 = -\frac{3}{4}ql$$

NODO A



$$\uparrow) -\frac{49}{40}ql + N_3 + N_4 \cdot \sin \alpha = 0$$

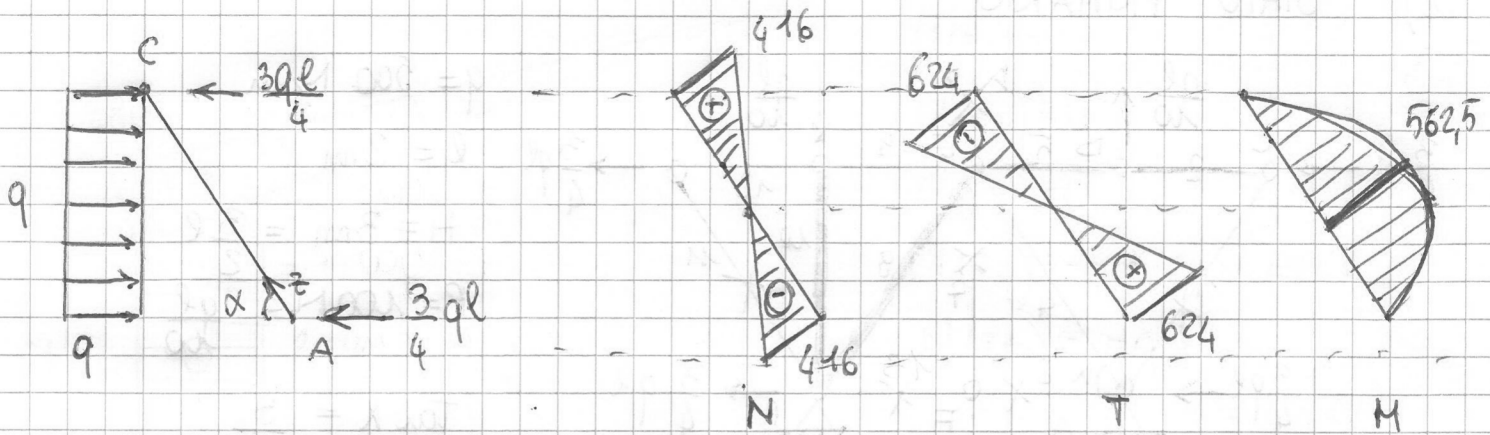
$$N_4 = \left(\frac{49}{40}ql - \frac{ql}{10}\right) \frac{1}{\sin \alpha} = 1352,1 \text{ N}$$

$$\rightarrow) \frac{3}{4}ql - \frac{3}{2}ql + N_4 \cos \alpha + N_6 = 0 \quad N_6 = 0$$

#	N# [N]
1	0
2	-750
3	100
4	1352,1
5	-750
6	0
7	0
8	-1352,1
9	750
10	-100
11	0
12	750
13	0

ANTISYMM

STATO SECONDARIO



$$N(z) = -\frac{3ql}{4} \cos \alpha + qz \sin \alpha \cos \alpha$$

$$T(z) = \frac{3ql}{4} \sin \alpha - qz \sin^2 \alpha$$

$$M(z) = \frac{3ql}{4} \cdot z \sin \alpha - q \left(\frac{z \sin \alpha}{2} \right)^2$$