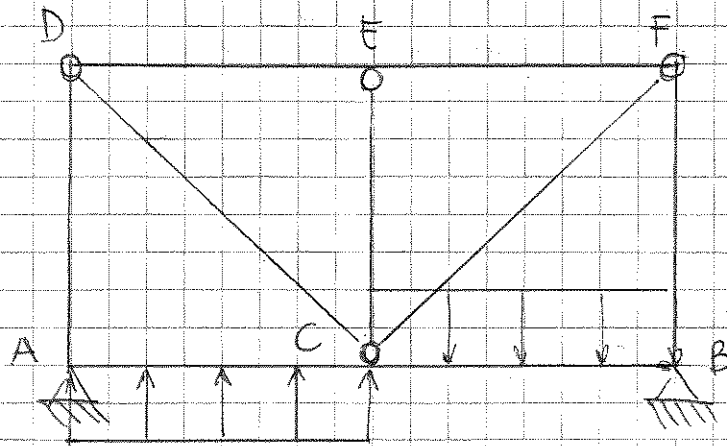
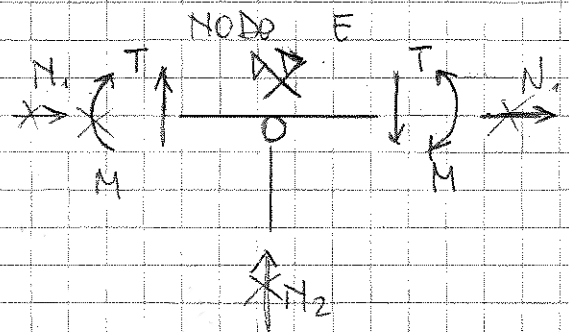




$$l = 4 \text{ m}$$

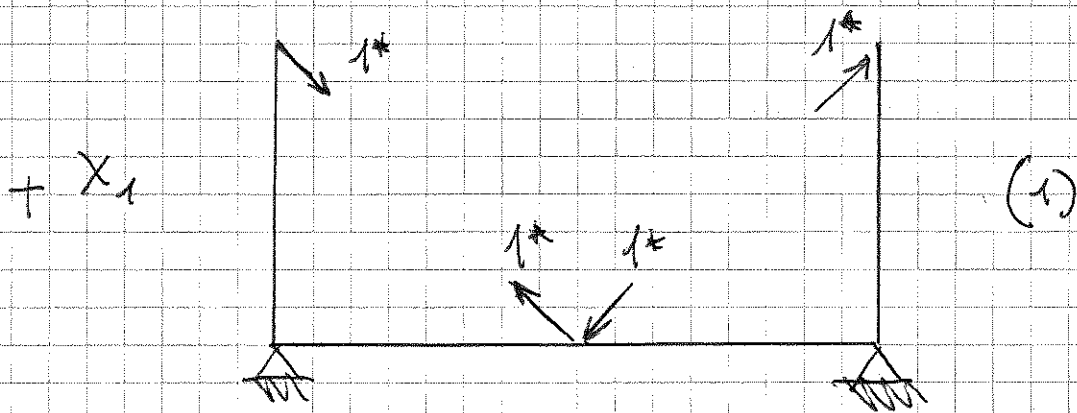
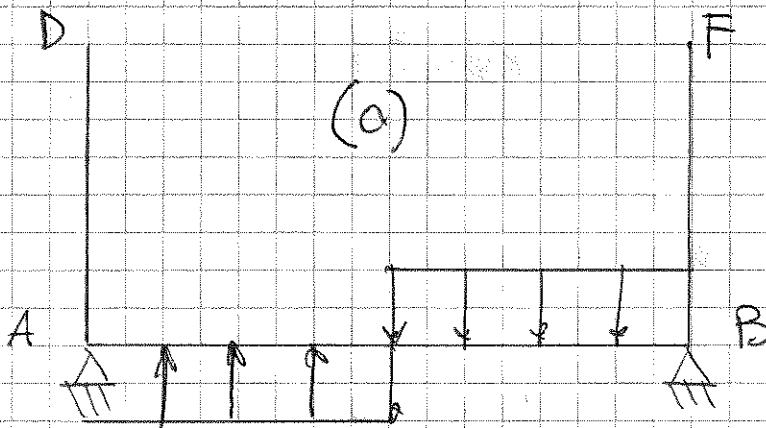
$$q = 2000 \text{ N/m}$$



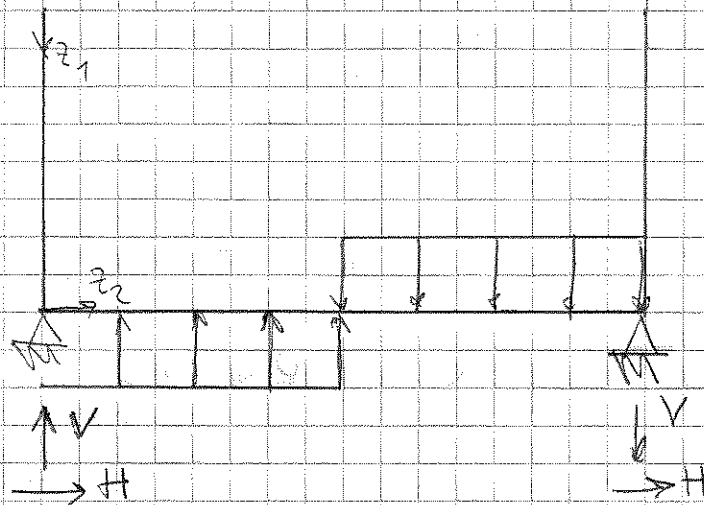
1)

la biella EC è carica per attrito

Visto che EC è carica, l'asta DF è una biella e quindi è anch'essa scarica



SISTEMA (0)

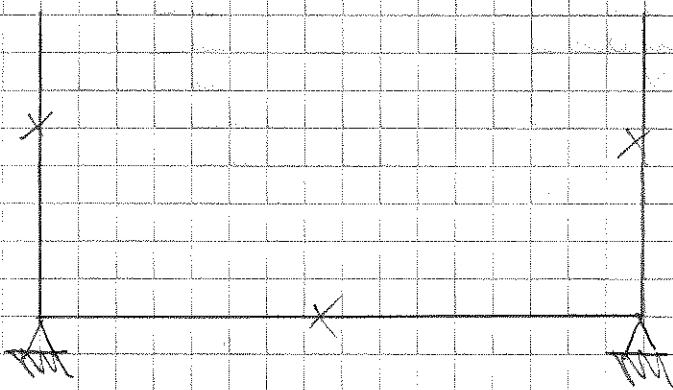


$$\rightarrow H = 0$$

$$\uparrow \frac{ql^2}{2} - \frac{3}{2}ql + V \cdot 2l = 0$$

$$V = -\frac{ql}{2}$$

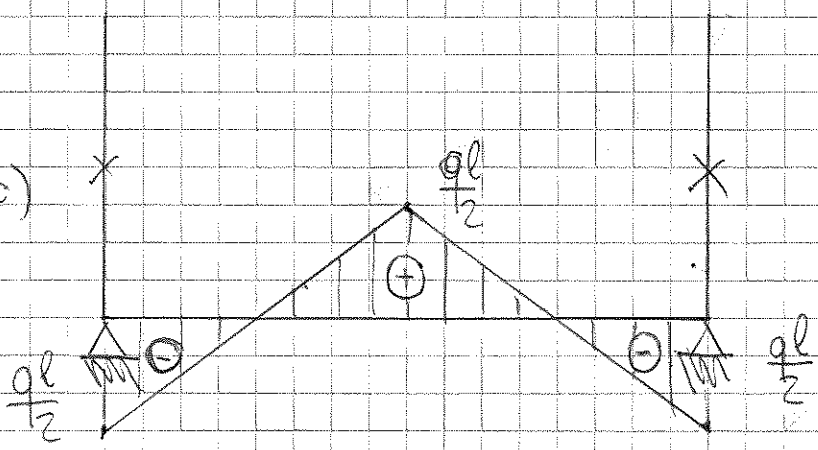
$N(c)$



$$N_0(z_1) = 0$$

$$N_0(z_2) = 0$$

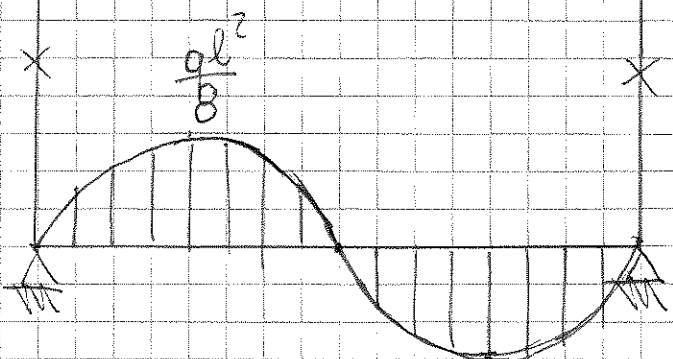
$T(c)$



$$T_0(z_1) = 0$$

$$T_0(z_2) = -\frac{ql}{2} + qz$$

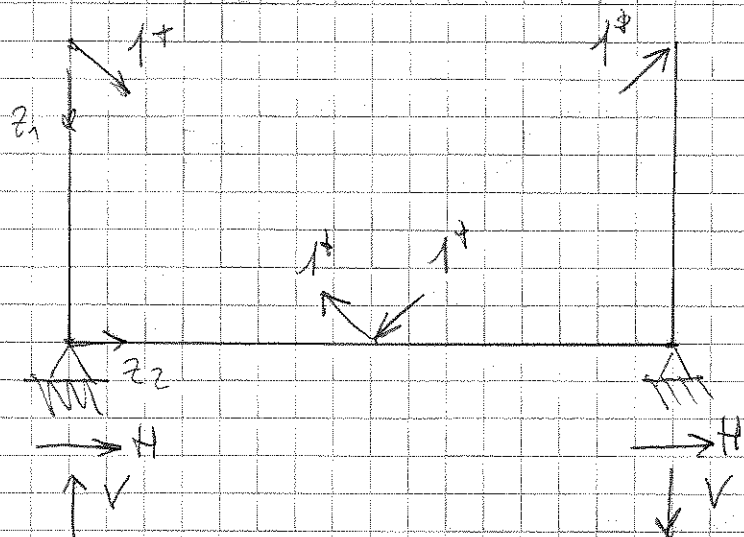
$M(c)$



$$M_0(z_1) = 0$$

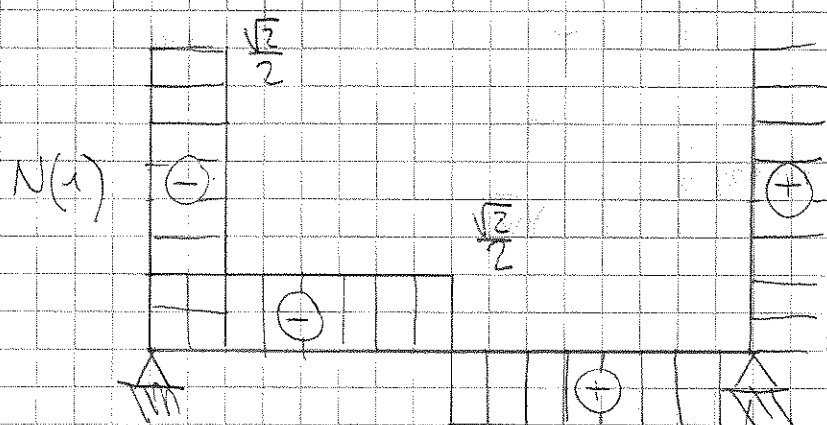
$$M_0(z_2) = -\frac{ql}{2}z + \frac{qz^2}{2}$$

SISTEMA (1)



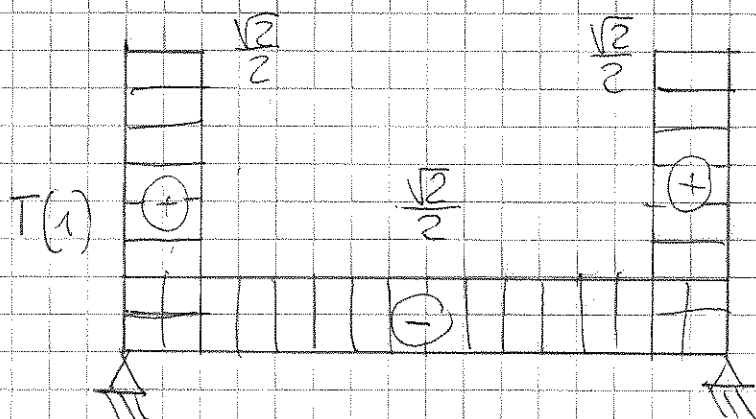
$$\rightarrow H = 0$$

$$\uparrow V = 0$$



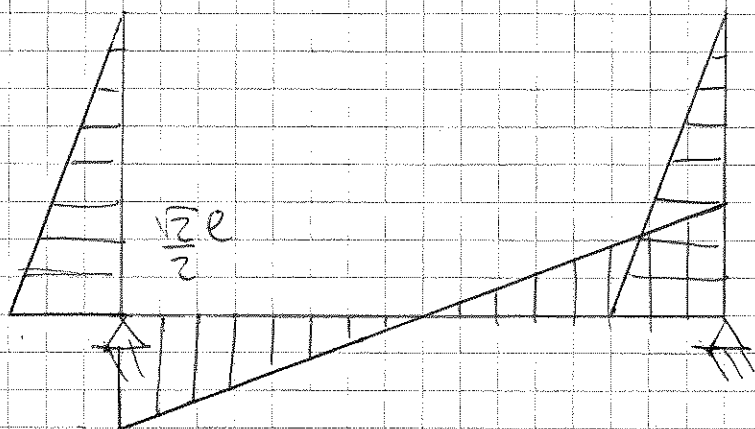
$$N_1(z_1) = -\frac{\sqrt{2}}{2}$$

$$N_1(z_2) = -\frac{\sqrt{2}}{2}$$



$$T_1(z_1) = \frac{\sqrt{2}}{2}$$

$$T_1(z_2) = -\frac{\sqrt{2}}{2}$$



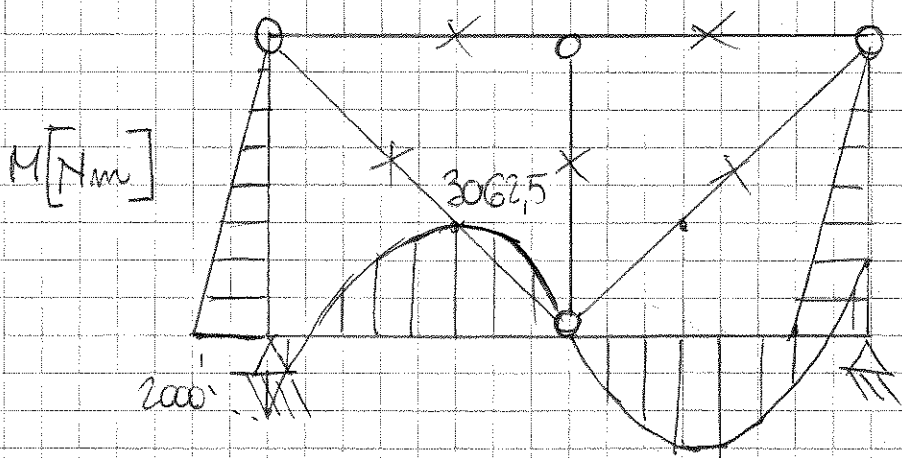
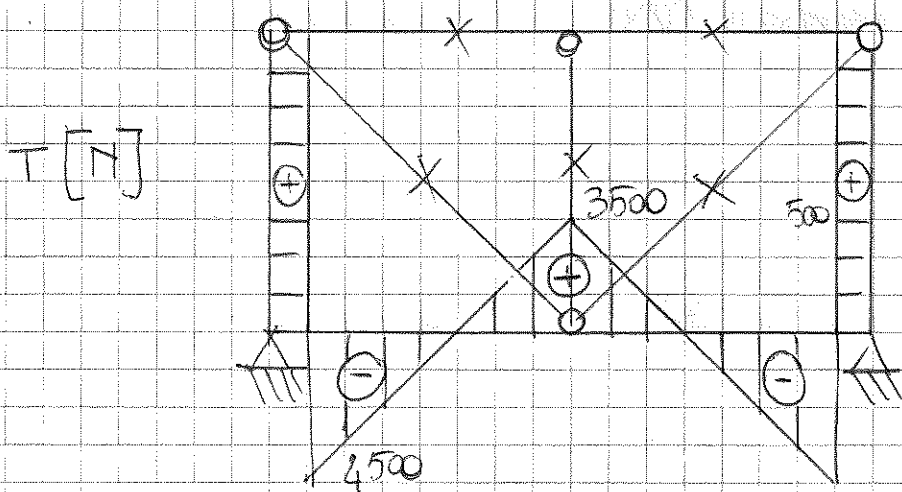
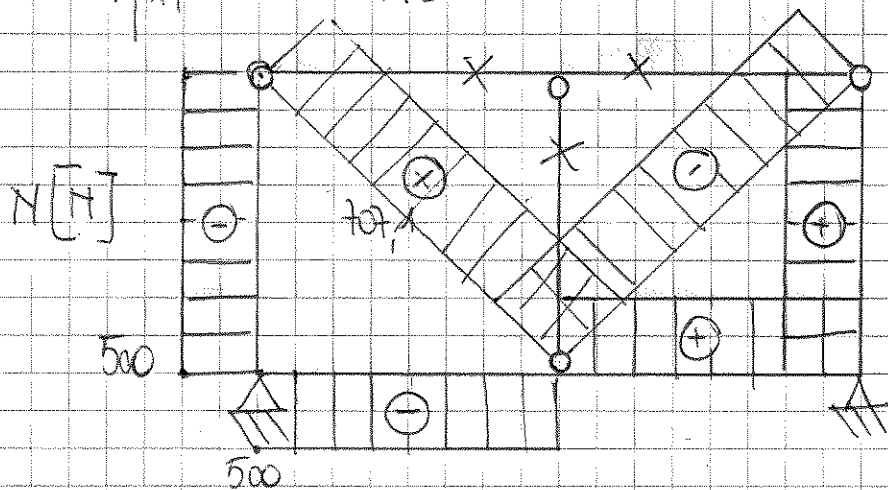
$$M_1(z_1) = -\frac{\sqrt{2}}{2} z$$

$$M_1(z_2) = \frac{\sqrt{2}}{2} l - \frac{\sqrt{2}}{2} z$$

$$M_{10} = \frac{2}{EJ} \int_0^l \left(-\frac{qlz}{2} + \frac{qz^2}{2} \right) \left(\frac{\sqrt{2}l}{2} - \frac{\sqrt{2}z}{2} \right) dz = -\frac{\sqrt{2}ql^4}{24EJ}$$

$$M_{11} = \frac{2}{EJ} \int_0^l \left(\frac{\sqrt{2}z}{2} \right)^2 dz + \frac{2}{EJ} \int_0^l \left(\frac{\sqrt{2}l}{2} - \frac{\sqrt{2}z}{2} \right)^2 dz = \frac{2l^3}{3EJ}$$

$$X = \frac{-M_{10}}{M_{11}} = \frac{\sqrt{2}ql}{16} = 707,1 \text{ N}$$



$$2) \quad \eta_{10}^N = 0$$

$$\eta_{11}^N = \frac{4}{EA} \int_0^l \left(\frac{\sqrt{2}}{2} \right)^2 dz + \frac{2}{EA} \int_0^{\sqrt{2}l} (1)^2 dz = \frac{2l(1+\sqrt{2})}{EA}$$

$$\eta_{10} + X \eta_{11} + 2 \int_0^{\sqrt{2}l} 1 \cdot X (-\Delta t) dz = 0$$

$$X = 740,83 \text{ N}$$

