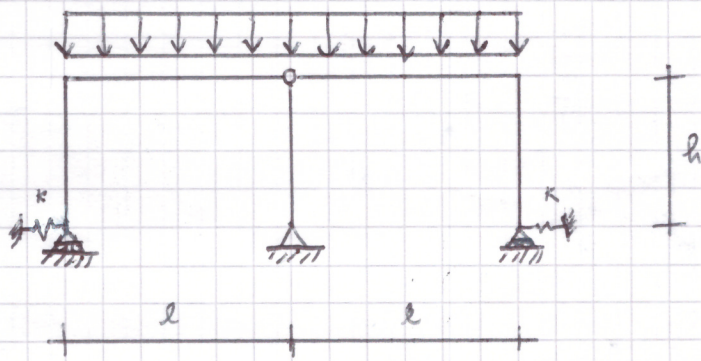


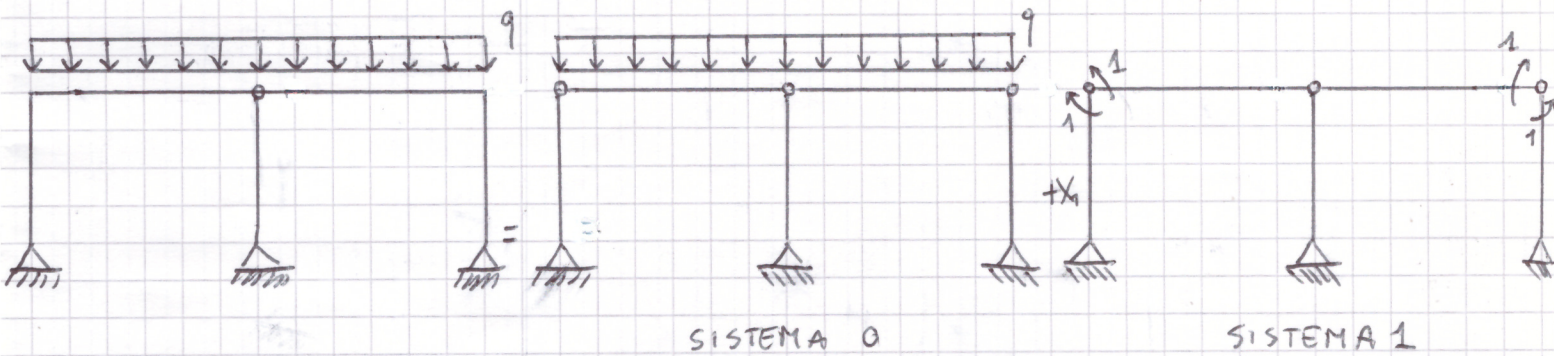


$$q = 2000 \text{ N/m}$$

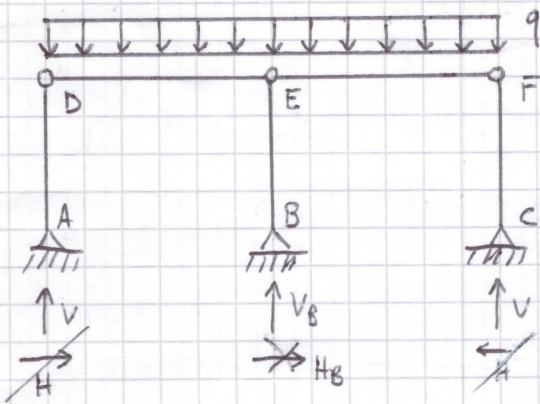
$$h = 3.5 \text{ m}$$

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

1) $k \rightarrow \infty$



SISTEMA 0



$$\uparrow H = 0$$

taglio AD

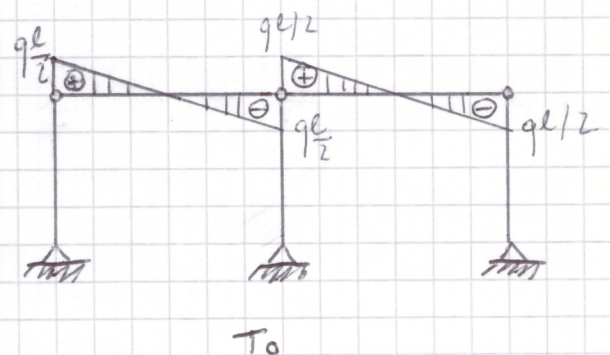
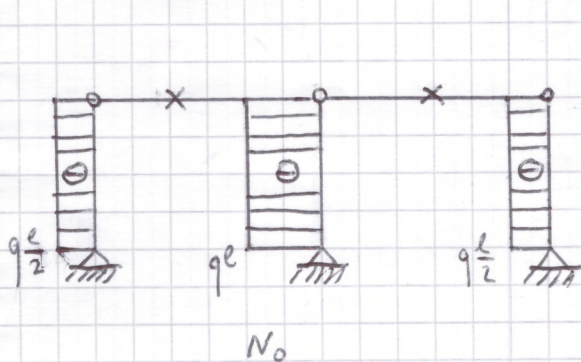
$$\rightarrow H_B = 0$$

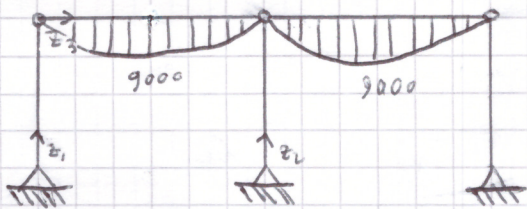
$$\uparrow q \cdot l \cdot \frac{l}{2} - V_E = 0$$

taglio EDA

$$V = q \frac{l}{2}$$

$$\uparrow V_B = ql$$





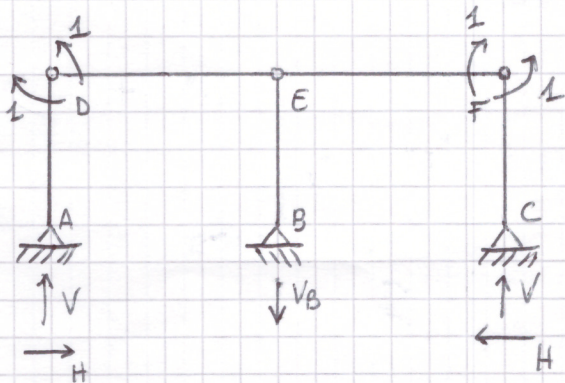
M_0

$$M(z_1) = 0$$

$$M(z_2) = 0$$

$$M(z_3) = q \frac{l}{2} z - \frac{q z^2}{2}$$

SISTEMA 1



$$D) -1 + H l = 0 \quad H = \frac{1}{l} = \frac{2}{7} \quad \text{tutto AD}$$

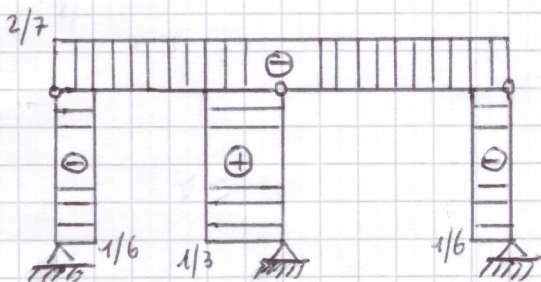
$$\rightarrow) H_B = 0$$

$$E) H l - V \cdot l = 0$$

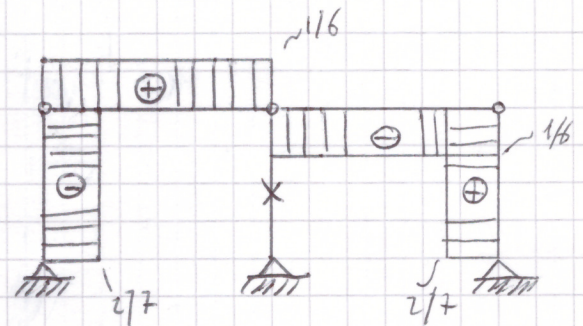
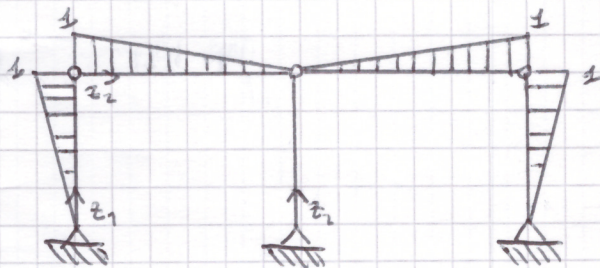
tutto EDA

$$1 - V l = 0 \quad V = \frac{1}{l} = \frac{1}{6}$$

$$\uparrow) V_B = \frac{2}{l} = \frac{1}{3}$$



N_1



T_1

$$M_1(z_1) = -\frac{z}{7}$$

$$M_1(z_2) = 0$$

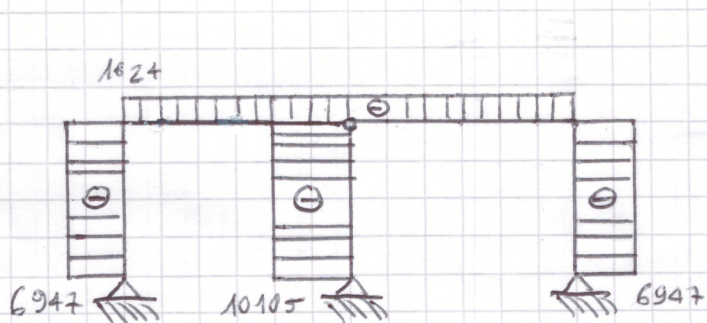
$$M_1(z_3) = -1 + \frac{z}{l}$$

M_1

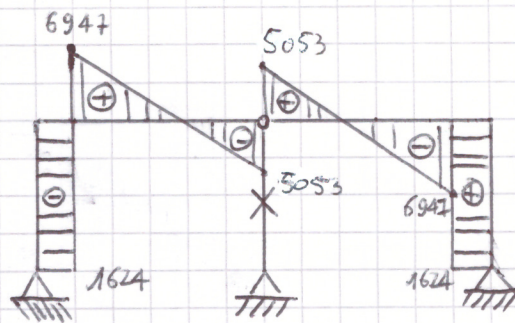
$$\eta_{10} = \frac{2}{EJ} \int_0^l \left(q \frac{l}{2} z - q \frac{z^2}{2} \right) \left(-1 + \frac{z}{l} \right) dz = -\frac{36000}{EJ}$$

$$\eta_{11} = \frac{2}{EJ} \left[\int_0^l \left(-\frac{z}{7} \right)^2 dz + \int_0^l \left(-1 + \frac{z}{l} \right)^2 dz \right] = \frac{19}{3EJ}$$

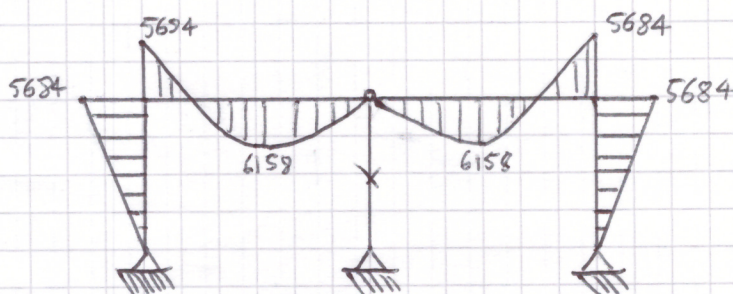
$$X_1 = -\frac{\eta_{10}}{\eta_{11}} = 5684 \text{ kNm}$$



$N [N]$



$T [N]$



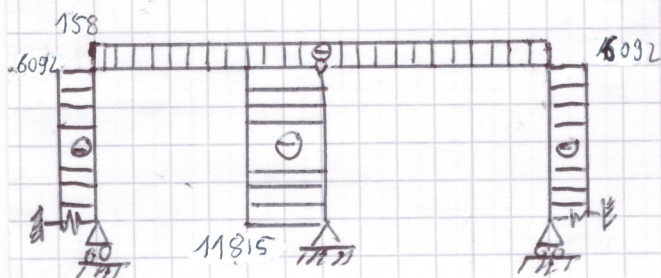
$M [Nm]$

2) $k = 1000 \text{ N/m}$

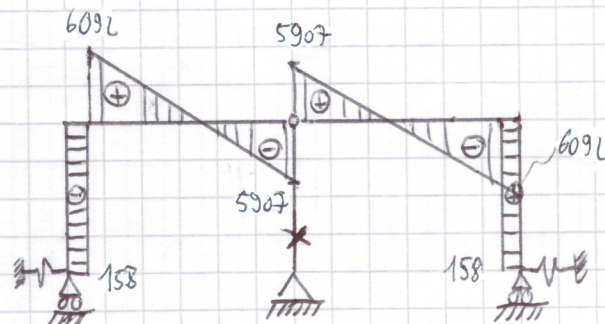
IPE 100 ($E = 21000 \text{ MPa}$, $I_x = 174.0 \text{ cm}^4$
 $A = 10.32 \text{ cm}^2$)

$$X_1 \eta_{11} + \eta_{10} + 2 \cdot \frac{2/7}{k} (X_1 \cdot \frac{2}{7}) = 0$$

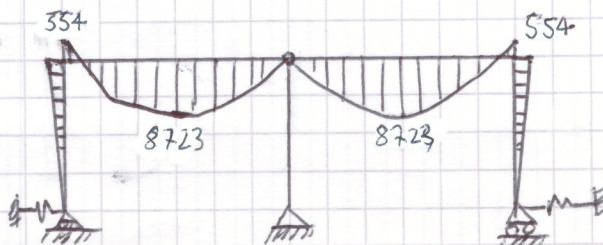
$$X_1 = \frac{-\eta_{10}}{\eta_{11} + \frac{8}{49k}} = 554 \text{ N/m}$$



$N [N]$



$T [N]$



$M [Nm]$