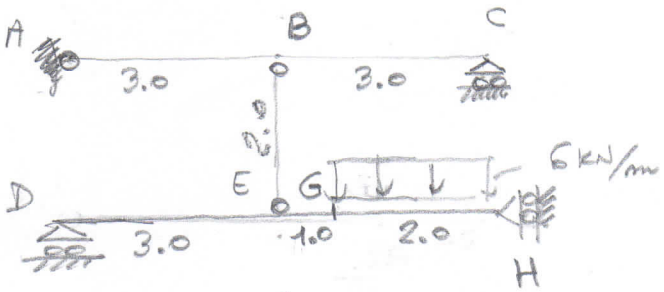
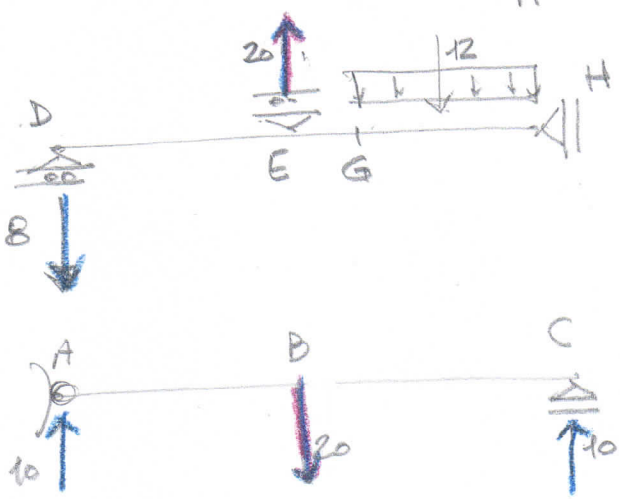
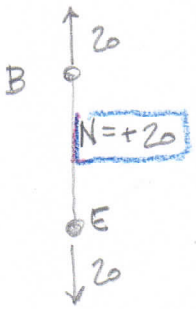
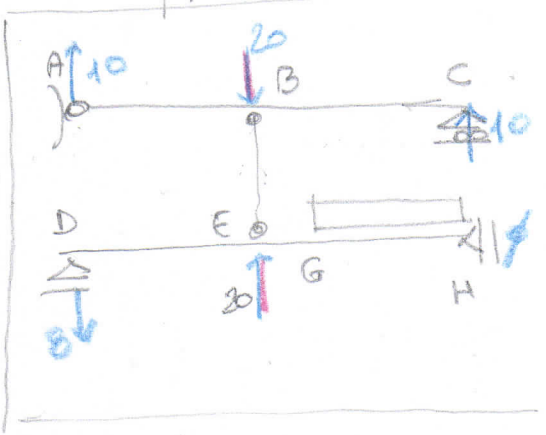
ES.1



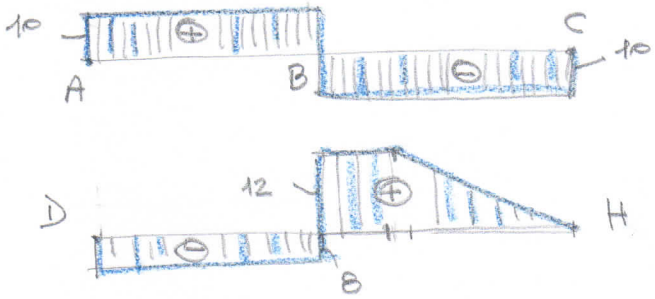




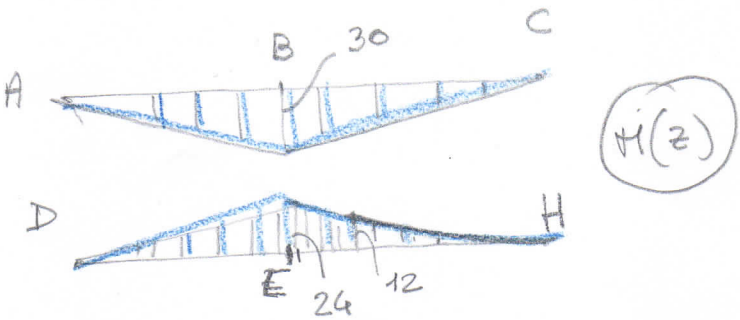
RIEPILOGO



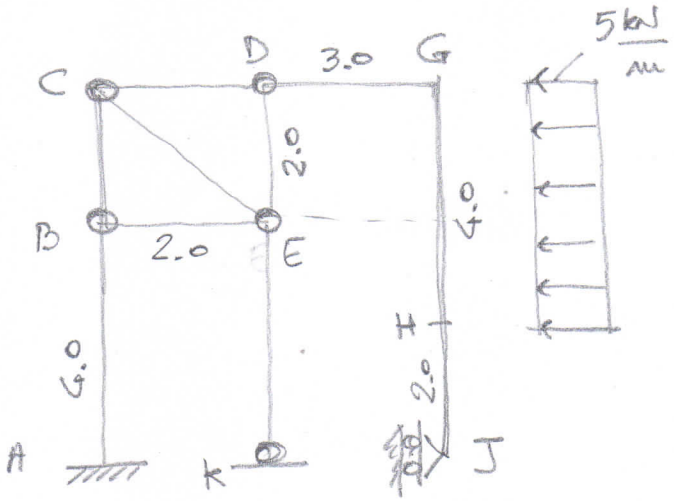
T(z)

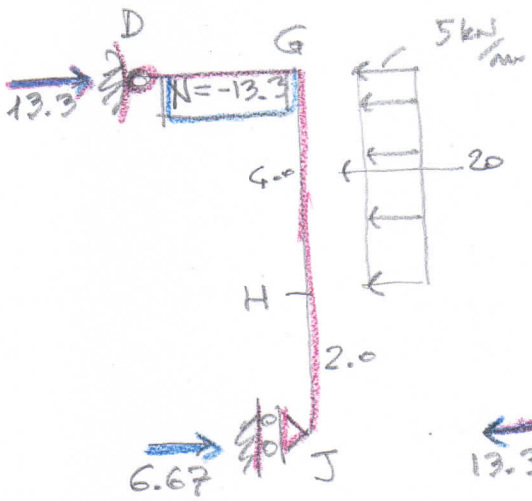


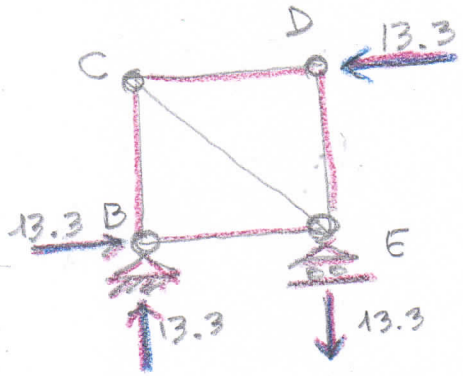
M(z)

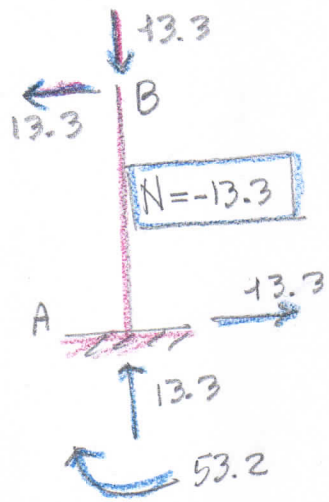


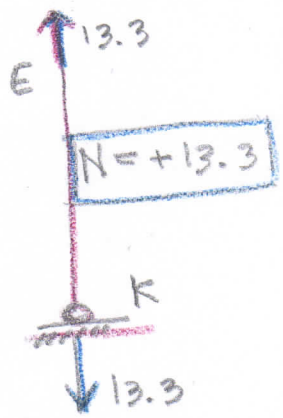
ES.2

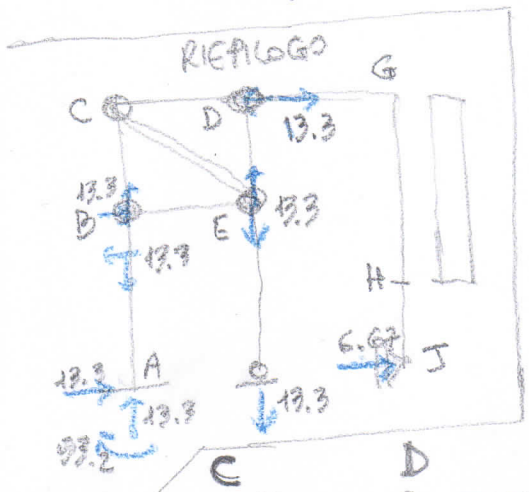


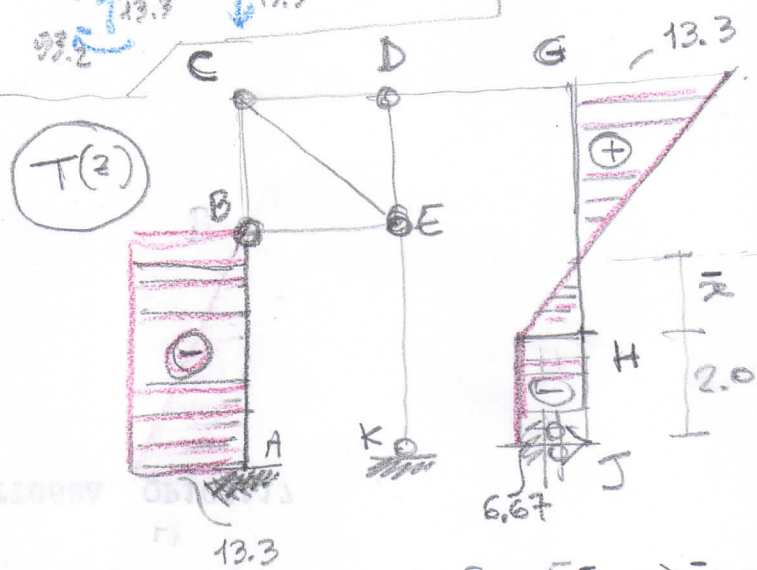


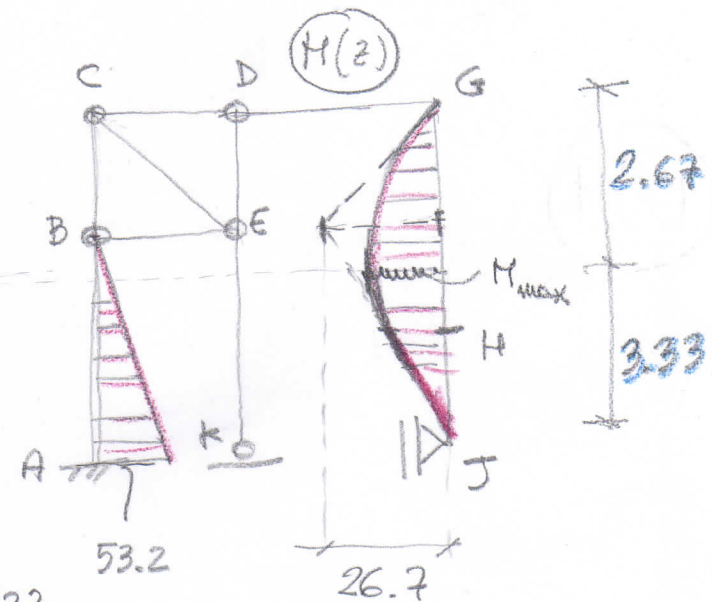






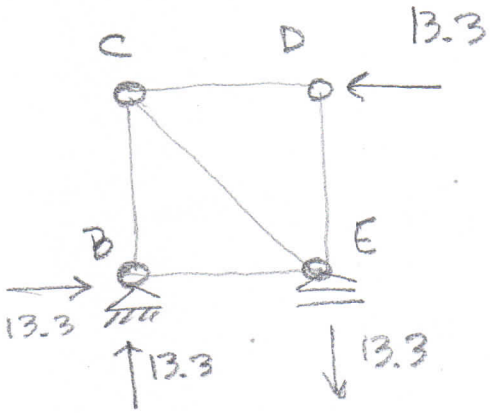




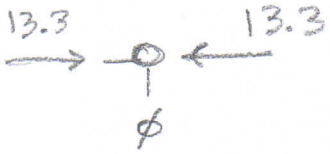


$$6.67 = 5\bar{z} \Rightarrow \bar{z} = 1.33$$

$$M_{max}^{GJ} = M(\bar{z}) = \frac{13.6 \times 2.67}{2} = 17.9 \text{ kNm}$$



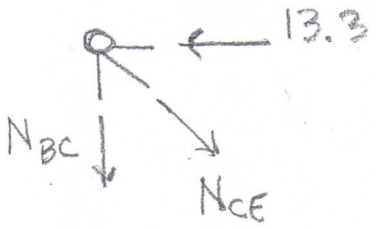
Nodo D

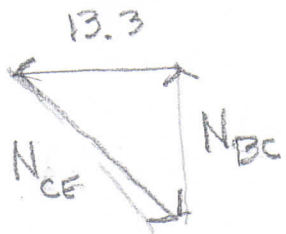


$N_{CD} = -13.3$

$N_{DE} = 0$

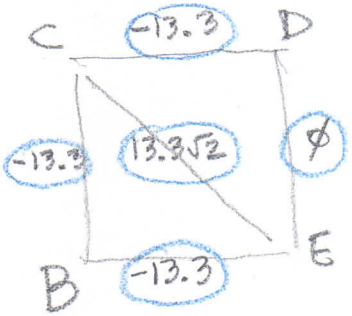
Nodo C



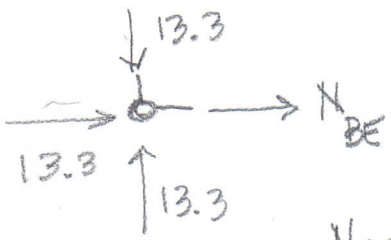


$N_{BC} = -13.3$

$N_{CE} = 13.3\sqrt{2} = 18.8$

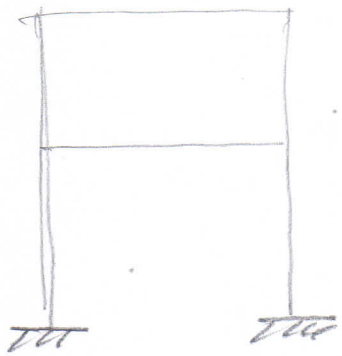


Nodo B

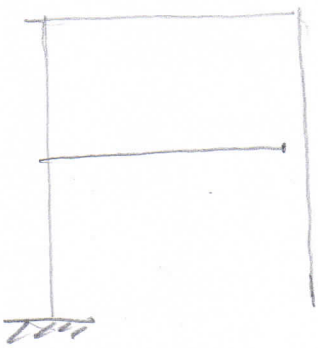


$N_{BE} = -13.3$

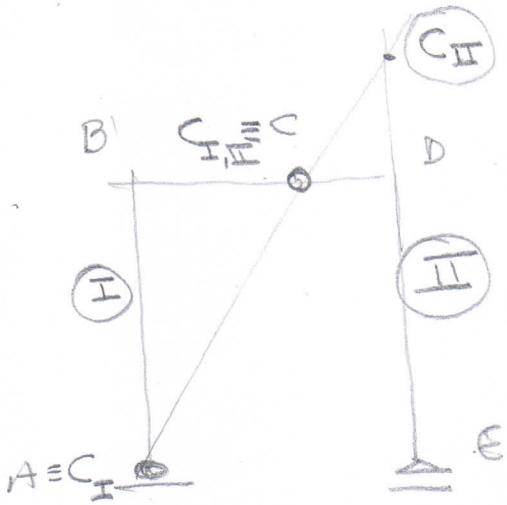
6 i p



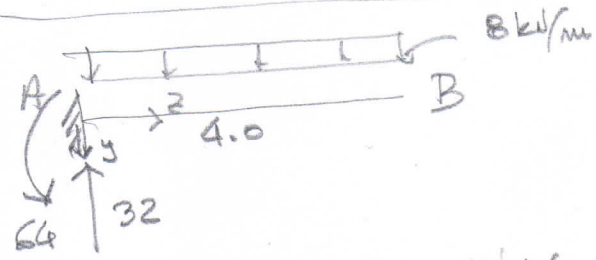
ES. 3



1S

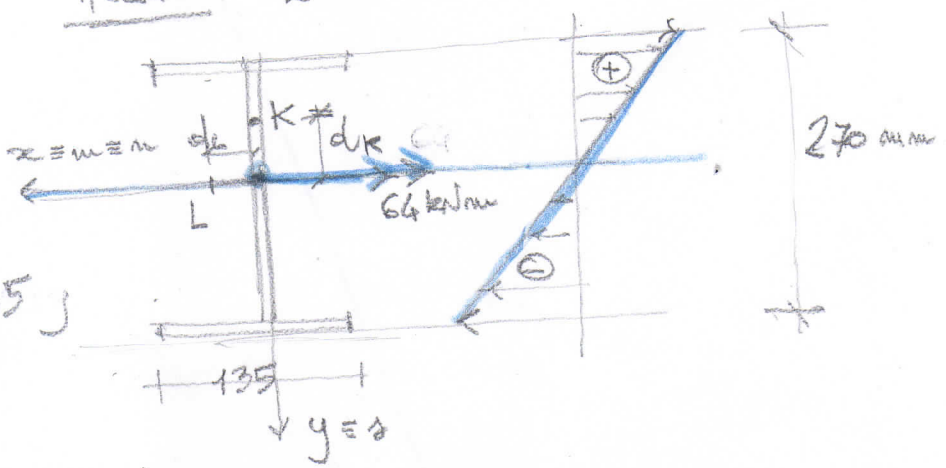


ES. 4



$J_y = 420\ cm^4$ $\quad J_x = 5790\ cm^4$ $\quad A = 45.90\ cm^2$

IPE 270



$|M_{max}| \geq |M_A| \quad M_A = M_z = -64\ kNm$

$$\sigma_z = -\frac{64 \times 10^6}{5790 \times 10^4}\, y = -1.105\, y$$

$$\sigma_z^{max} = -1.105 \times \left(-\frac{270}{2}\right) = 149\ \frac{N}{mm^2}$$

Pto K nocciolo:

$$\frac{270}{2} \cdot d = \int_z^2 \Rightarrow \frac{270}{2} d = \frac{5790 \times 10^4}{45.90 \times 10^2} \Rightarrow d_K = 93\ mm$$

Pto L nocciolo

$$\frac{135}{2} \cdot d = \int_y^2 \Rightarrow \frac{135}{2} d = \frac{420 \times 10^4}{45.9 \times 10^2} \Rightarrow d_L = 14\ mm$$