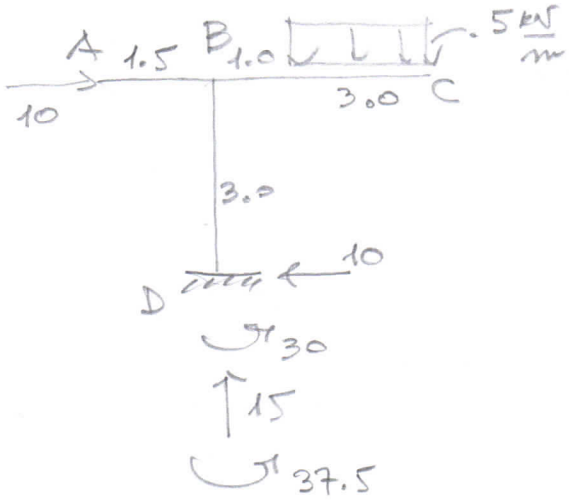
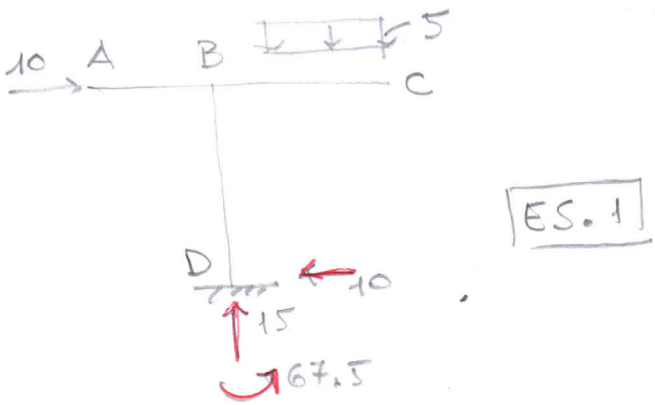
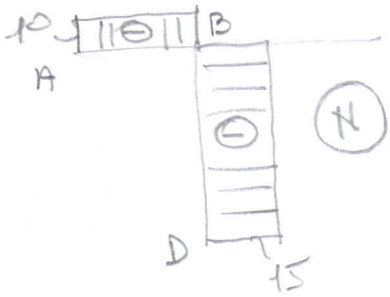
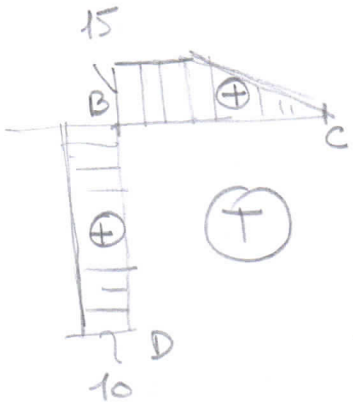
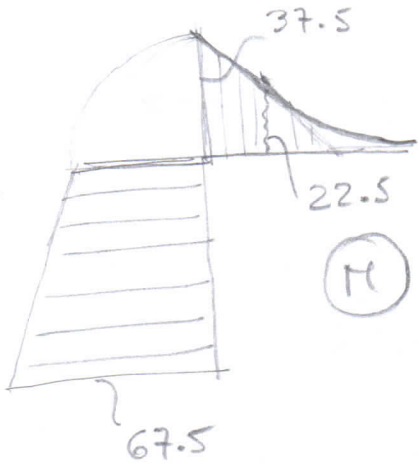
ES. 1

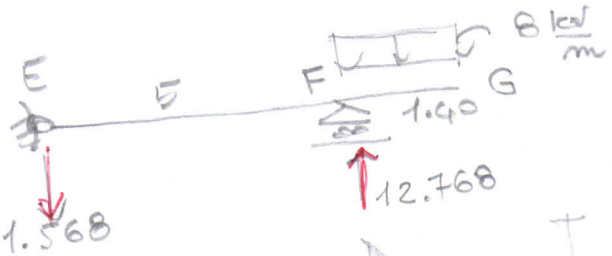

A
1.5
B
1.0
5 kN/m
3.0
C
10
3.0
D
10
30
15
37.5

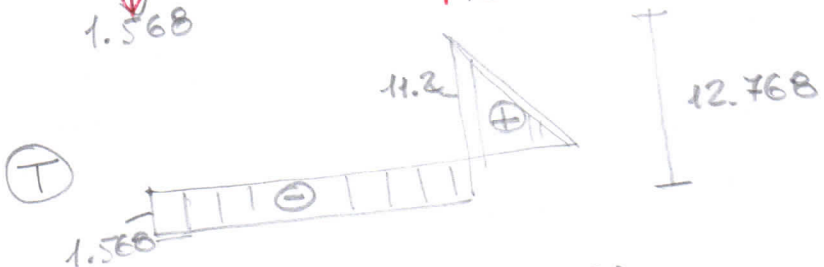

10
A
B
5
C
D
10
15
67.5

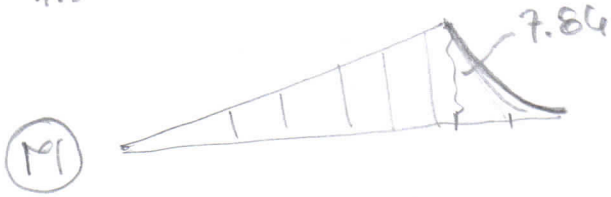

10
A
B
N
D
15

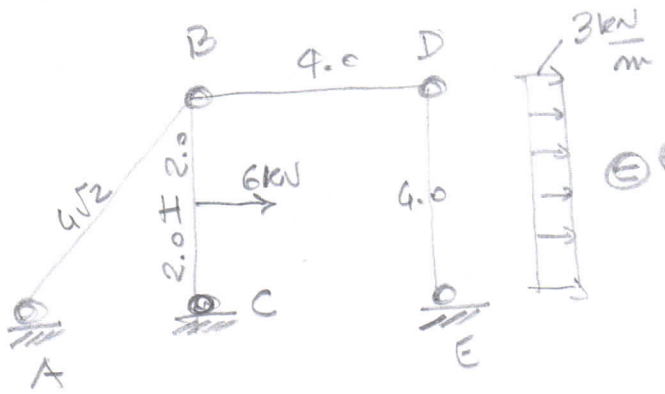

15
B
C
T
D
10


37.5
22.5
M
67.5

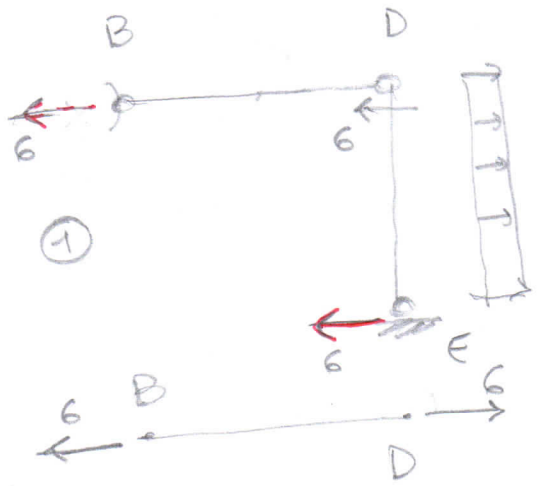

E
5
F
8 kN/m
1.40
G
12.768
1.568

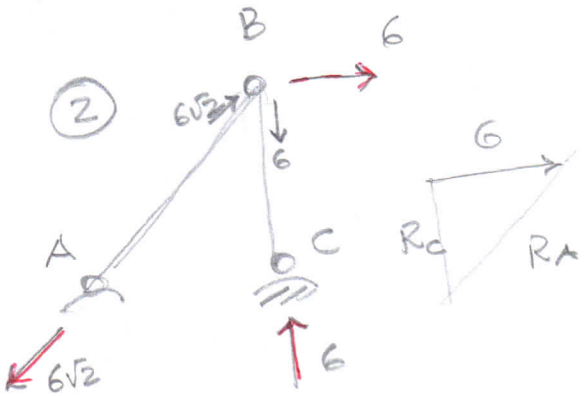

11.2
12.768
T
1.568

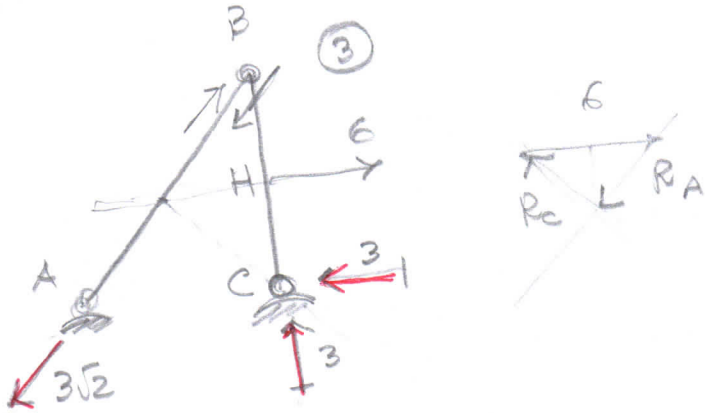

7.84
Mf

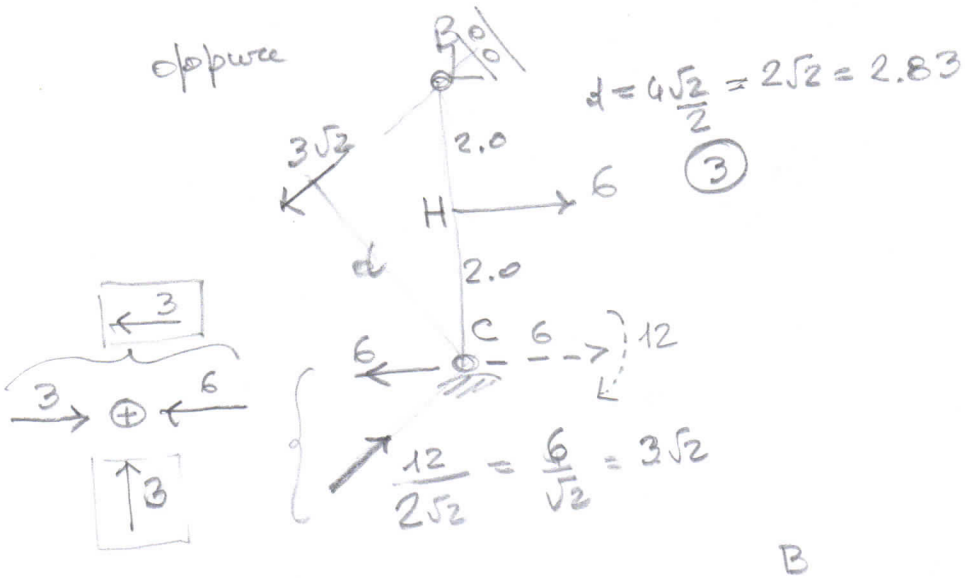


$\ominus$ ① + ② + ③

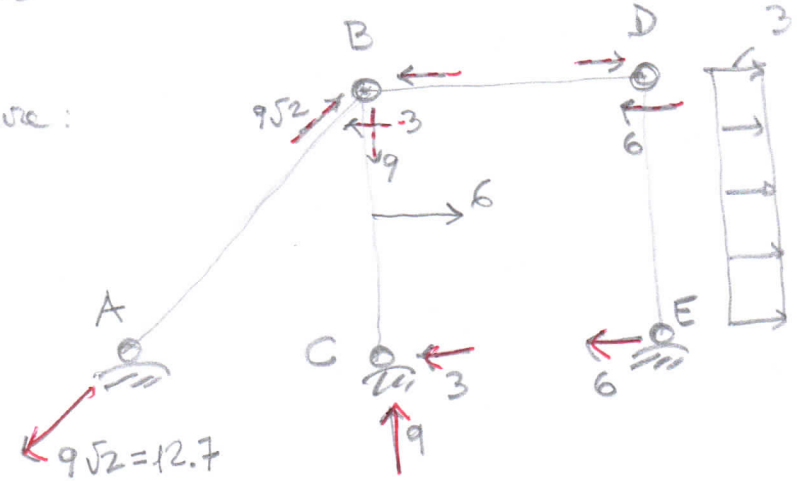


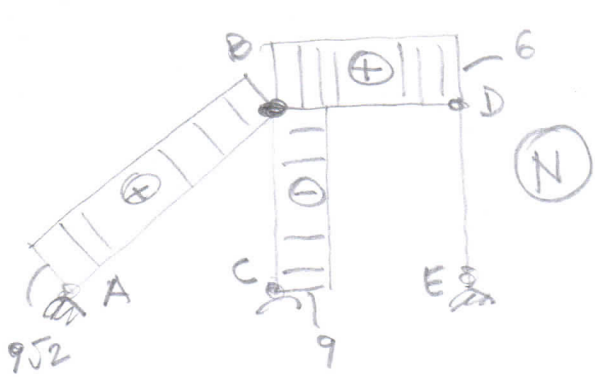


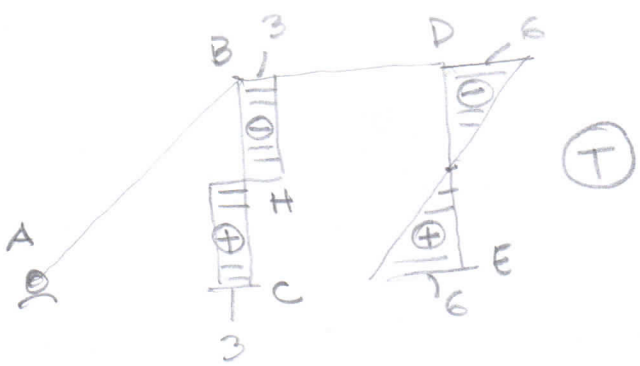


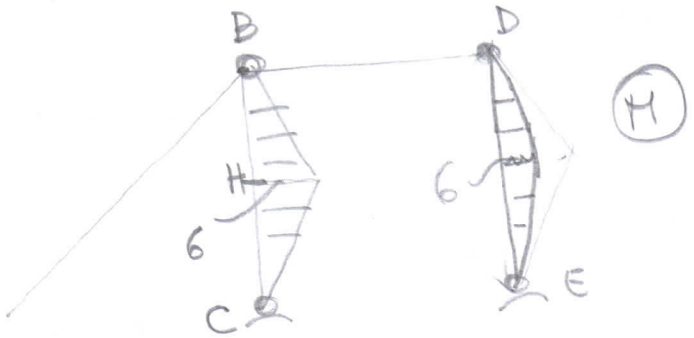


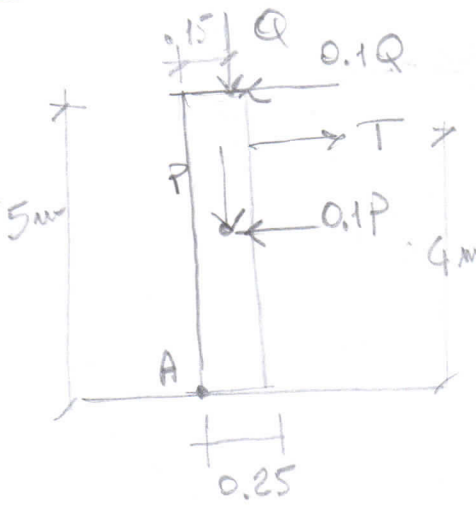
In definitiva:











$q_{sol} = 3 \frac{kN}{m^2}$

$l_{sol} = 4\,m$

$prof_{muro} = 1\,m$

$\gamma = 18 \frac{kN}{m^3}$

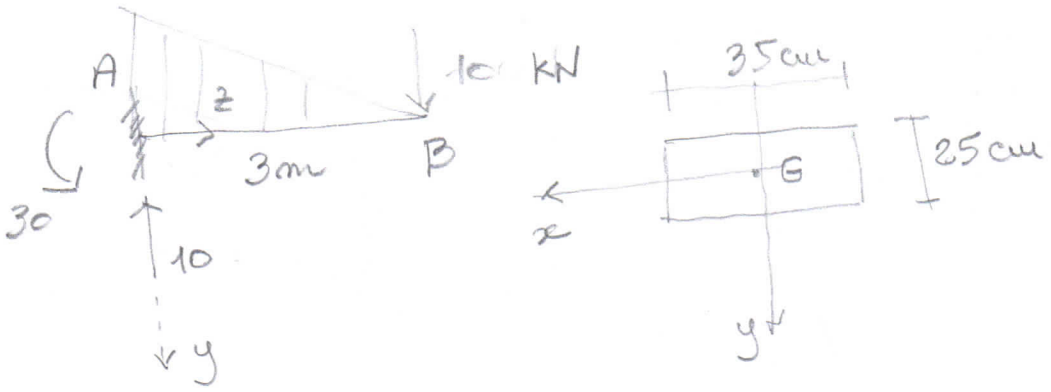
$Q = 3 \times \frac{4}{2} = 6\ kN/m$

$P = 18 \times 5 \times 0.25 = 22.5$

$$M_{st} = 22.5 \times \frac{0.25}{2} + 6 \times 0.15 + T \cdot 4 = 3.7125 + 4T$$

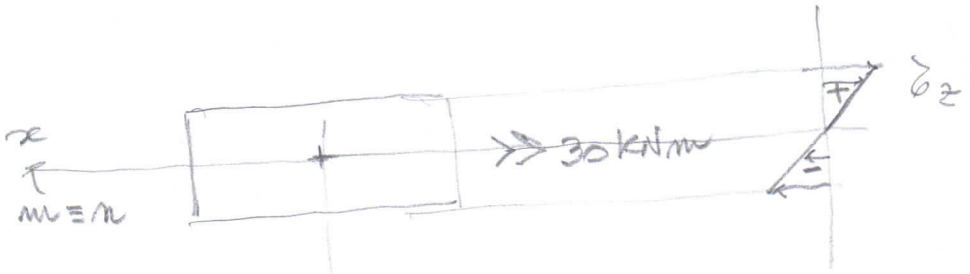
$$M_{rst} = 0.1 \times \left(22.5 \times \frac{5}{2} + 6 \times 5\right) = 8.625$$

$$T = \frac{8.625 - 3.7125}{4} = 1.228\ kN$$



$$I_x = \frac{35 \times 25^3}{12} = 45573 \text{ cm}^4$$

$$\sigma_z = -\frac{30 \times 10^6}{45573 \times 10^4} y = -0.06583\, y$$



$$\sigma_z^{max} = -0.06583 \times \left(-\frac{250}{2}\right) = 8.23 \frac{N}{mm^2}$$