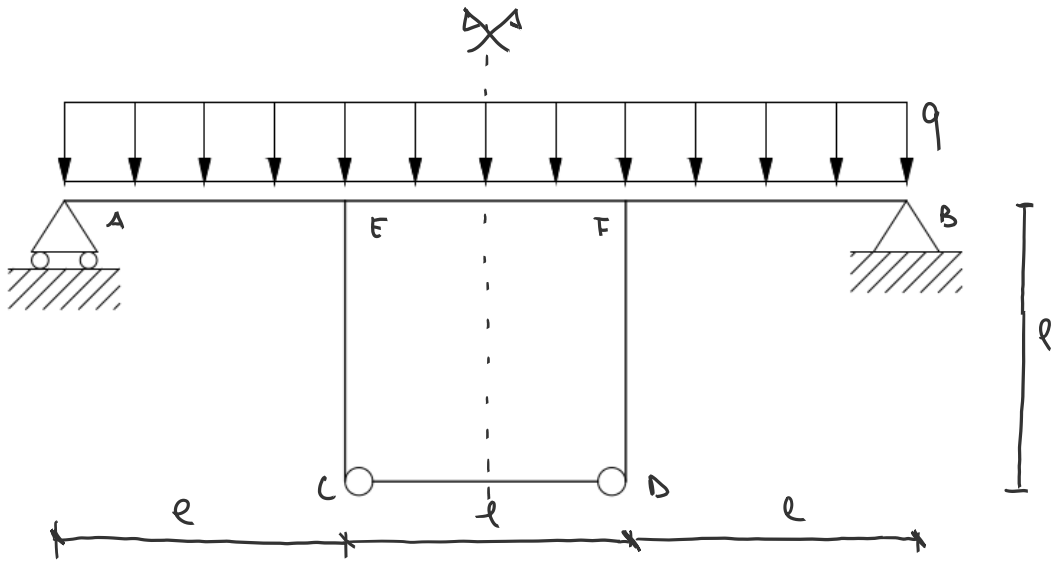
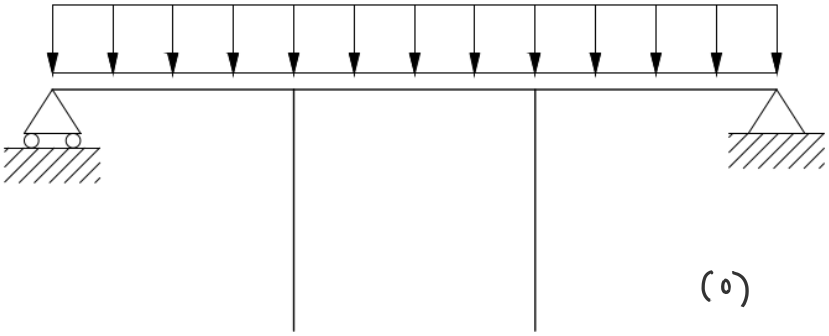
TOTALE SdC

30/01/2020

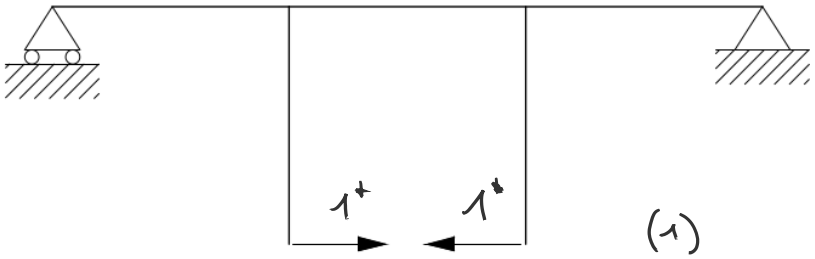



$q = 2\,KN/m$

$l = 3\,m$



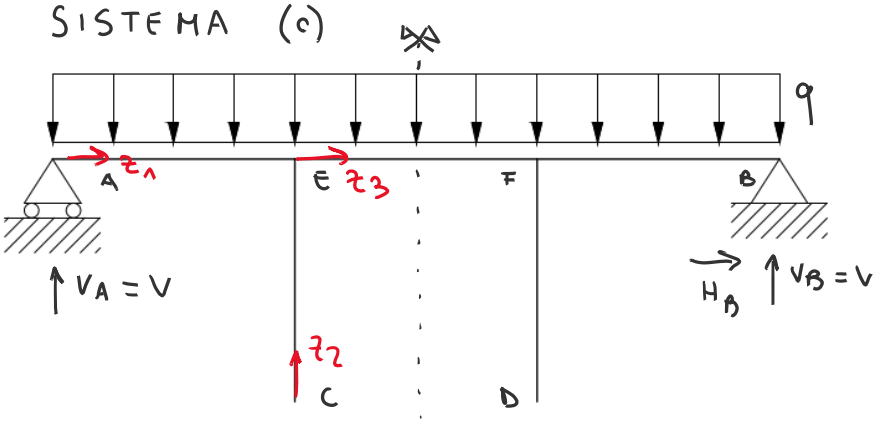
(0)




+ X

(1)

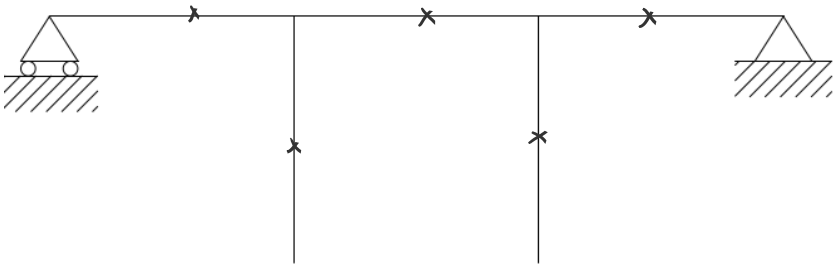

SISTEMA (0)




$\rightarrow) \; H_B = 0$

$\uparrow) \; 2V - 3ql = 0$

$V = \frac{3}{2} ql$

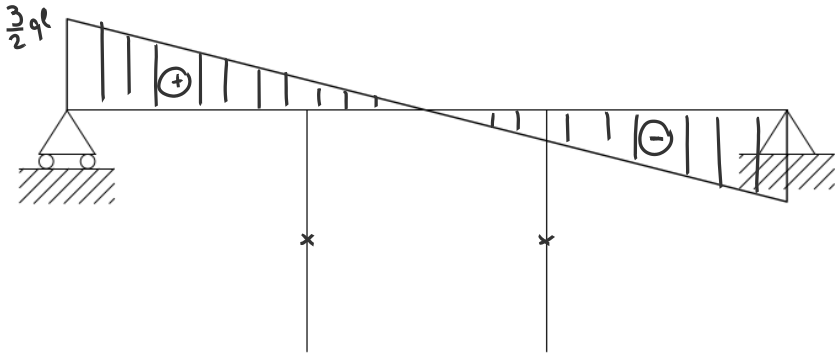


$N_0$

$N_0(z_1) = C$

$N_0(z_2) = C$

$N_0(z_3) = C$

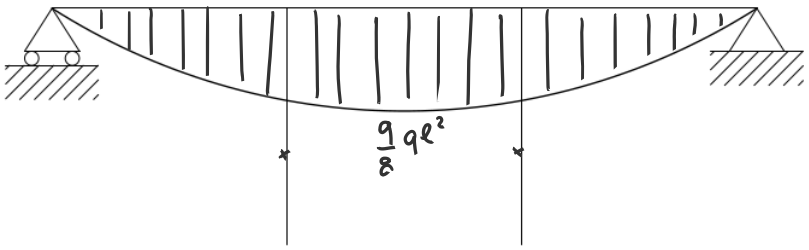



$T_0$

$T_0(z_1) = \frac{3}{2}ql - qz$

$T_0(z_2) = C$

$T_0(z_3) = \frac{ql}{2} - qz$



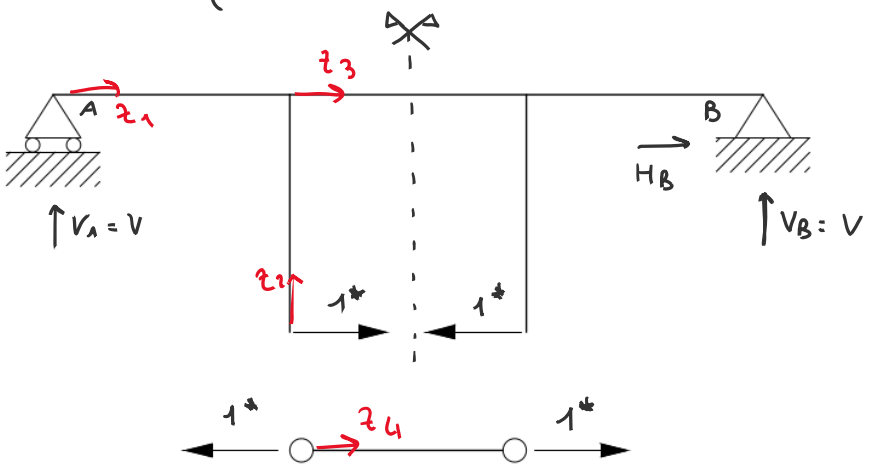

$M_0$

$M_0(z_1) = qlz - \frac{qz^2}{2}$

$M_0(z_2) = C$

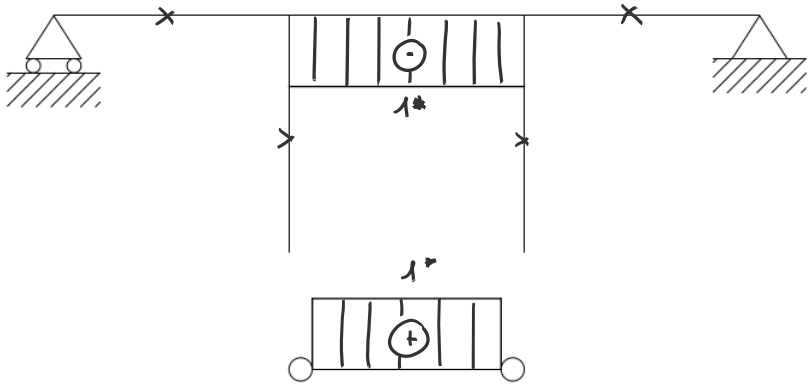
$M_0(z_3) = \frac{qlz}{2} - \frac{qz^2}{2} + \frac{qlz}{2}$

SISTEMA (1)




→ ) $H_B = C$

↑ ) $V = C$



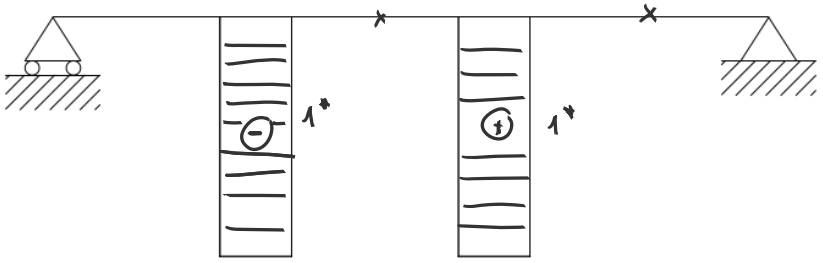

$N_1$

$N_1(z_1) = 0$

$N_1(z_2) = 0$

$N_1(z_3) = -1$

$N_1(z_4) = 1$

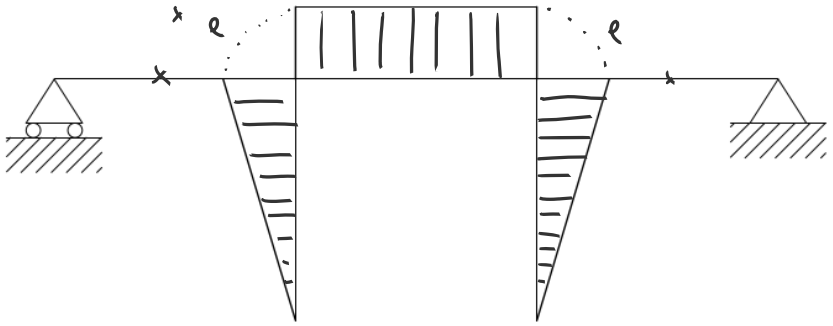



$T_1$

$T_1(z_1) = 0$

$T_1(z_2) = -1^*$

$T_1(z_3) = 0$




$M_1$

$M_1(z_1) = 0$

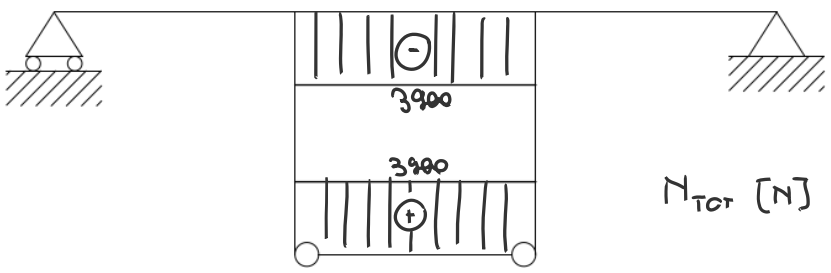
$M_1(z_2) = -z$

$M_1(z_3) = -l$

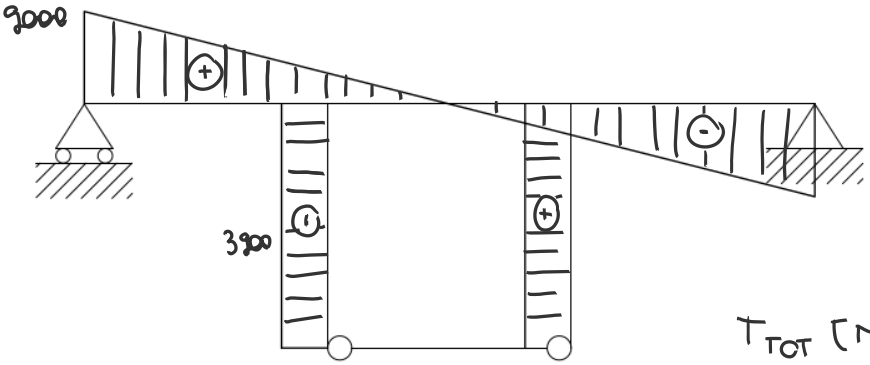
$$M_{10} = \frac{1}{EJ} \int_0^{l/2} \left( \frac{ql}{2} z - \frac{q z^2}{2} + ql^2 \right)(-l)\, dz = -\frac{13}{24} \frac{ql^4}{EJ}$$

$$M_{11} = \frac{1}{EJ} \left[ \int_0^{l} z^2\, dz + \int_0^{l/2} l^2\, dz \right] = \frac{5}{6} \frac{l^3}{EJ}$$

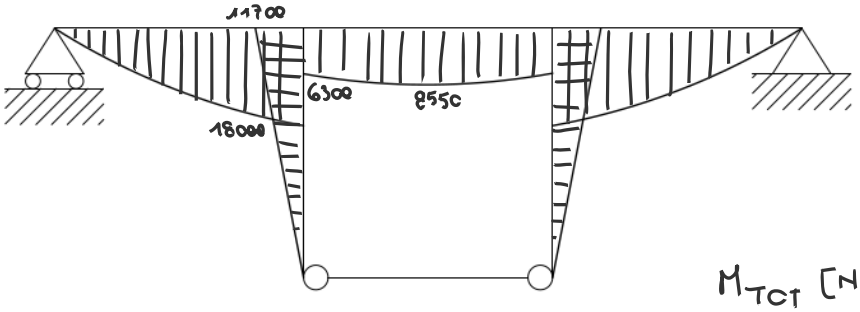
$$X = -\frac{M_{10}}{M_{11}} = \frac{13}{24} \frac{ql^4}{5 l^3} 6 = \frac{13}{20} ql = 3900\ N$$




$N_{TOT}$ [N]




$T_{TOT}$ [N]




$M_{TOT}$ [Nm]