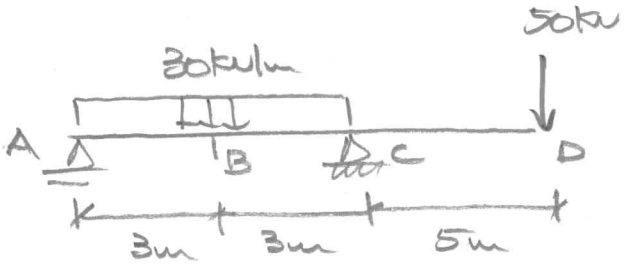
B2T4NA0607 0,8 PONTOS

PARA TODAS AS BARRAS:

$E = 30\,GPa$ $b = 12cm$ $h = 60cm$

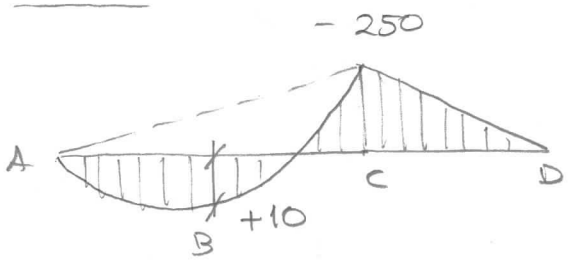


PEDE-SE:

Q01) δ_B

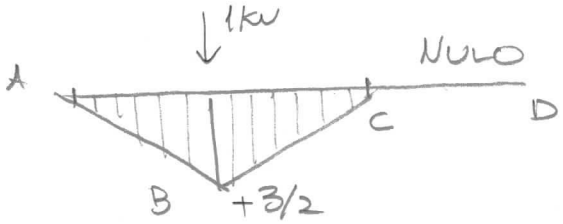
Q02) δ_D

M REAL



$$-\frac{250}{2} + 30 \times \frac{6^2}{8} = 10$$

M VIRTUAL δ_B



$$1 \times 3 \times 3/6 = 9/6 = 3/2$$

M VIRTUAL δ_D



$$EI = 30 \times 10^6 \times 0{,}12 \times 0{,}6^3/12$$

$$EI = 64800\ kNm^2$$

$$\delta_B = \frac{1}{EI}\ 1/6 \cdot 6 \cdot 3/2 \left[0 + 2 \times 10 + (-250) \times 0{,}5 - 0{,}5 \times 0{,}5\,(0 - 2 \times 10 - 250)\right]$$

(Q01)

$$\delta_B = -56{,}25 / 64800 = -0{,}86806 \times 10^{-3}\,m = \underline{0{,}86806\,mm \uparrow (+)}$$

$$\delta_D = 1/EI \left[1/3\ 5 \times (-5)(-250) + 1/6\ 6 \times (-5)(2 \times 10 - 250)\right]$$

(Q02)

$$\delta_D = 9700/3.64800 = +0{,}049897\,m = \underline{49{,}897\,mm \downarrow (-)}$$