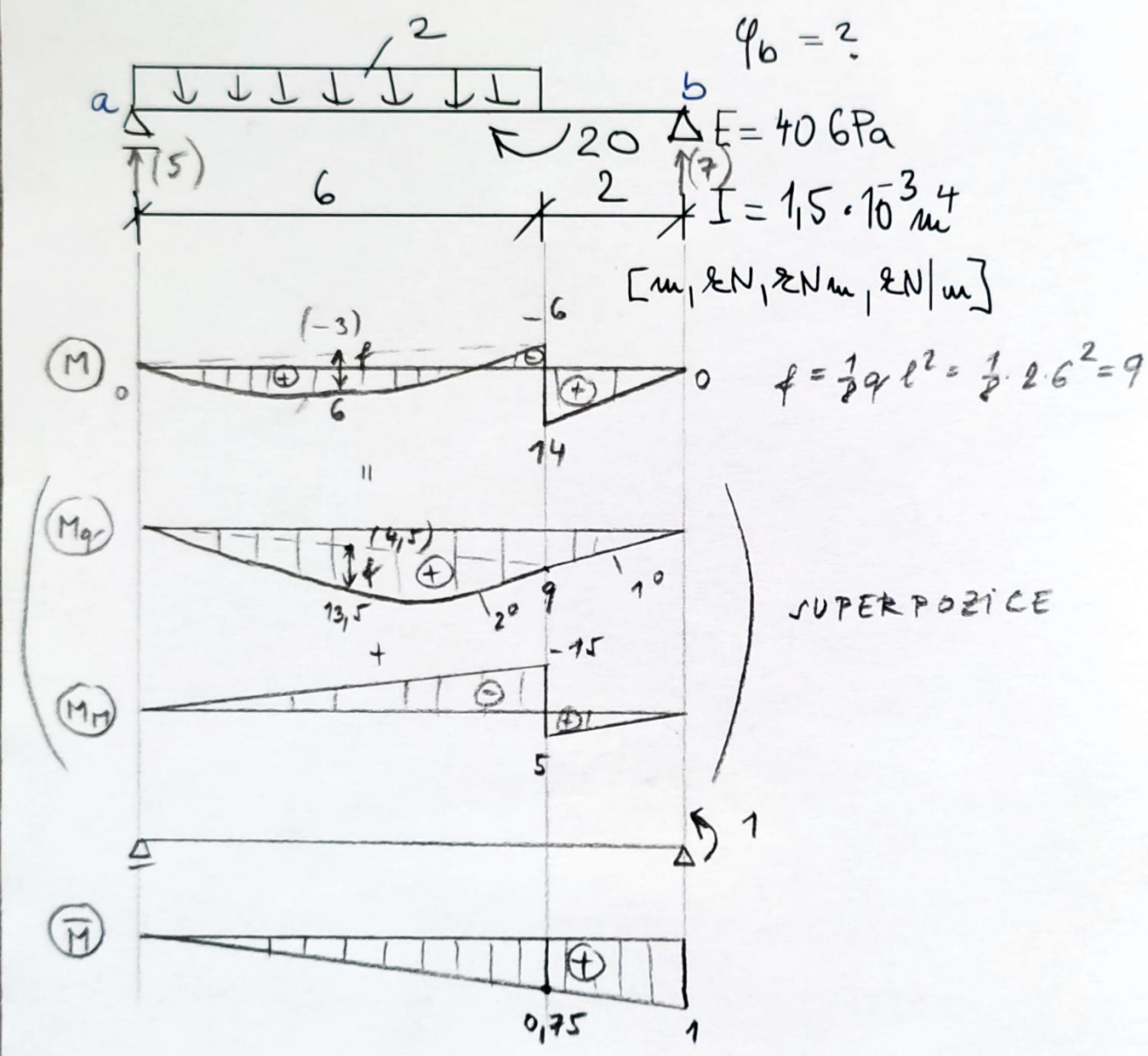


$\varphi_b = ?$

$E = 40\ GPa$

$I = 1{,}5 \cdot 10^{-3}\ m^4$

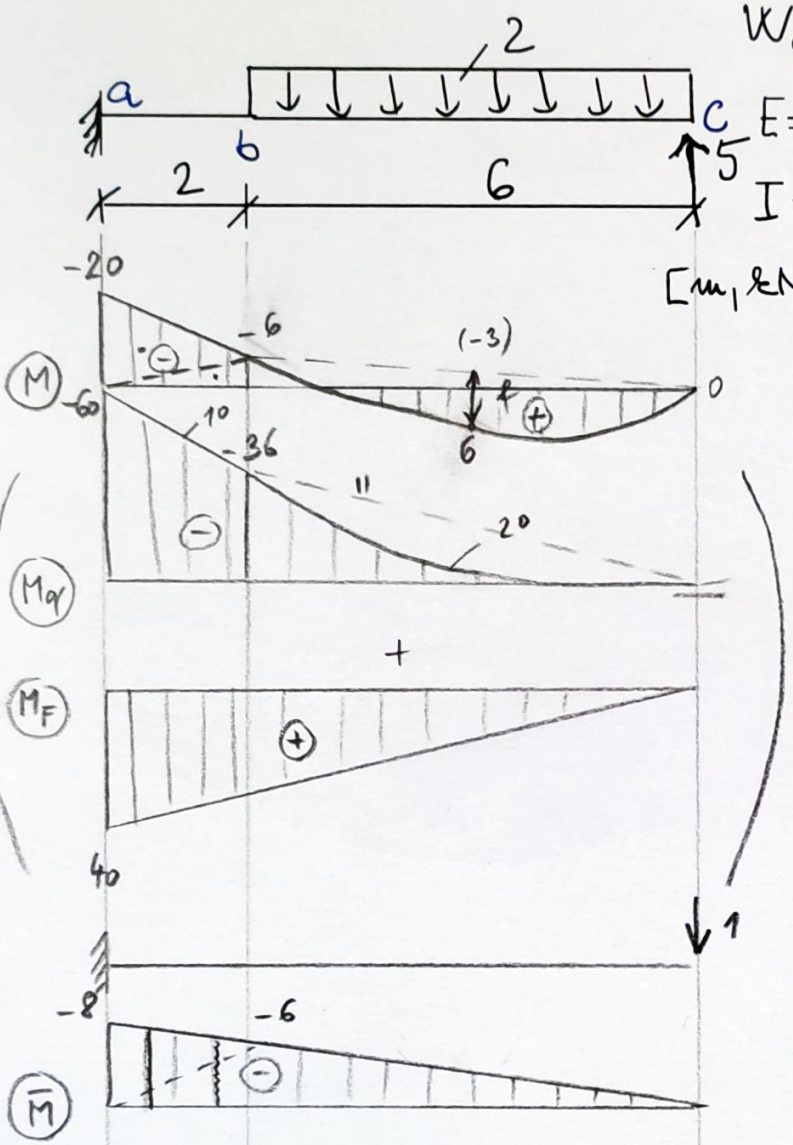
$f = \frac{1}{8} q l^2 = \frac{1}{8} \cdot 2 \cdot 6^2 = 9$

SUPERPOZICE

$$\varphi_b = \frac{1}{EI}\left\{\left(\tfrac{1}{2}(-6)\,6\right)\left[\tfrac{2}{3}\cdot 0{,}75\right] + \left(\tfrac{2}{3}\cdot 6\cdot 9\right)\left[\tfrac{1}{2}\cdot 0{,}75\right] + \left(\tfrac{1}{2}\,14\,2\right)\cdot\left[\tfrac{2}{3}\cdot 0{,}75 + \tfrac{1}{3}\cdot 1\right]\right\} = \frac{97}{6EI} =$$

$$= \frac{97}{6 \cdot 40 \cdot 10^6 \cdot 1{,}5 \cdot 10^{-3}} = \underline{2{,}694 \cdot 10^{-4}\ rad}$$

$w_c = ?$



$E = 60\,GPa$

$I = 3 \cdot 10^{-4}\,m^4$

[m, kN, kNm, kN/m]

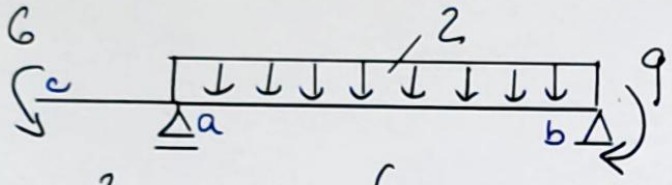
$f = \frac{1}{8} q \ell^2 = \frac{1}{8} \cdot 2 \cdot 6^2 = 9$

SUPERPOZICE

$$w_c = \frac{1}{EI}\left\{\left(\tfrac{1}{2}(-20)\cdot 2\right)\left[\tfrac{2}{3}(-8)+\tfrac{1}{3}(-6)\right] + \left(\tfrac{1}{2}(-6)\cdot 2\right)\cdot\left[\tfrac{1}{3}(-8)+\tfrac{2}{3}(-6)\right]\right.$$

$$\left. + \left(\tfrac{1}{2}\cdot 6\cdot(-6)\right)\left[\tfrac{2}{3}\cdot(-6)\right] + \left(\tfrac{2}{3}\cdot 6\cdot 9\right)\cdot\left[\tfrac{1}{2}\cdot(-6)\right]\right\} =$$

$$= \frac{452}{3EI} = \frac{452}{3 \cdot 60 \cdot 10^6 \cdot 3 \cdot 40^{-4}} = \underline{8{,}370 \cdot 10^{-3}\,m}$$

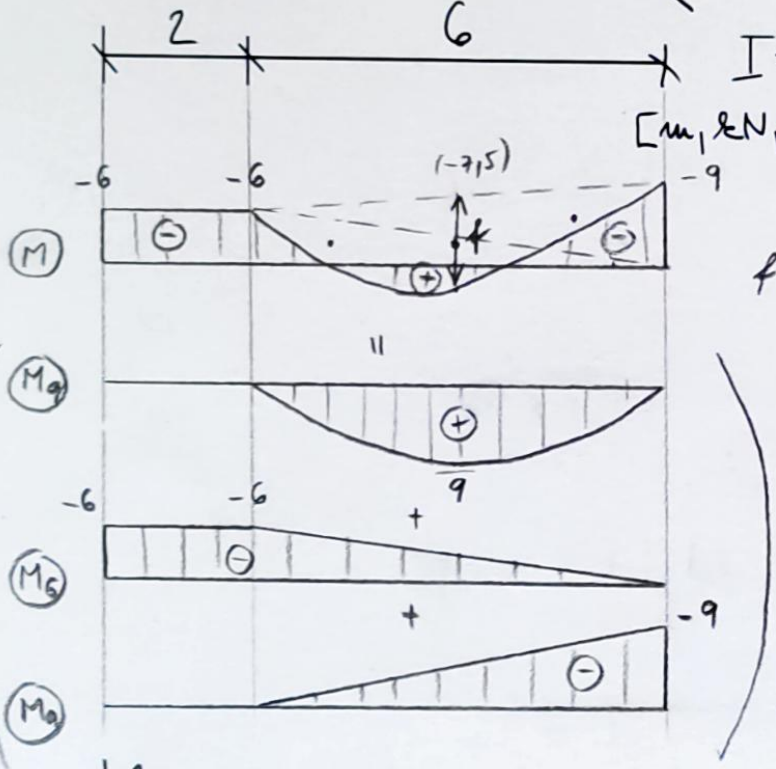


$w_c = ?$

$E = 50 GPa$

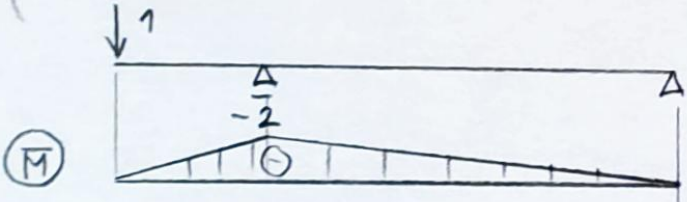
$I = 4{,}5 \cdot 10^{-4} m^4$

[m, kN, kNm, kN/m]



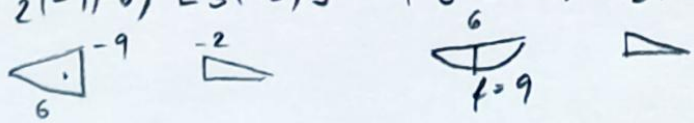
SUPERPOZICE

$f = \frac{1}{8} q l^2 = \frac{1}{8} \cdot 2 \cdot 6^2 = 9$



$$w_c = \frac{1}{EI}\left\{(-6\cdot 2)\cdot\left[\tfrac{1}{2}(-2)\right] + \left(\tfrac{1}{2}(-6)\cdot 6\right)\cdot\left[\tfrac{2}{3}(-2)\right] + \right.$$

$$\left. + \left(\tfrac{1}{2}(-9)\cdot 6\right)\left[\tfrac{2}{3}(-2)\right] + \left(\tfrac{2}{3}\cdot 6\cdot 9\right)\cdot\left[\tfrac{1}{2}(-2)\right]\right\} = \frac{18}{EI} =$$



$$= \frac{18}{50\cdot 10^6 \cdot 4{,}5\cdot 10^{-4}} = \underline{\underline{8\cdot 10^{-4}\, m = 0{,}8\cdot 10^{-3}\, m}}$$