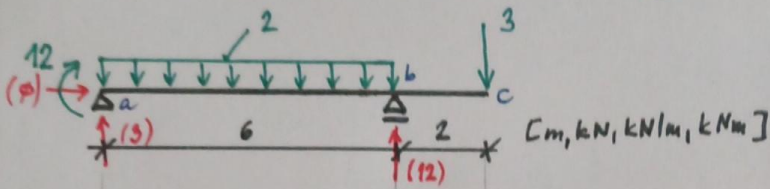


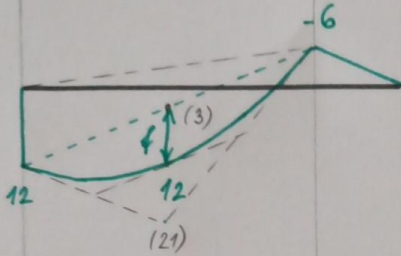
(A)

$$\varphi_a = ?$$

$$EI = 1,35 \cdot 10^4 \text{ kPa} \cdot \text{m}^4$$

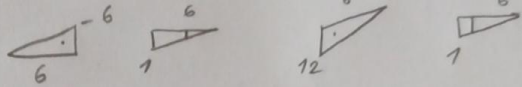


(M)



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

$$\varphi_a = \frac{1}{EI} \left\{ \left(\frac{1}{2} (-6) \cdot 6 \right) \cdot \left[\frac{1}{3} \cdot 1 \right] + \left(\frac{1}{2} (12) \cdot 6 \right) \cdot \left[\frac{2}{3} \cdot 1 \right] + \right.$$



$$+ \left(\frac{2}{3} \cdot 6 \cdot 9 \right) \cdot \left[\frac{1}{2} \cdot 1 \right] \right\}$$

$$\underline{\underline{\varphi_a = \frac{36}{EI} = \frac{36}{1,35 \cdot 10^4} = 2,6 \cdot 10^{-3} \text{ rad}}}$$

(T)

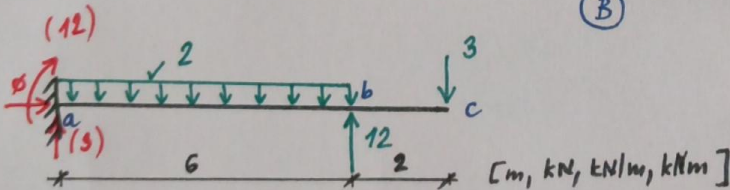
(M)

1

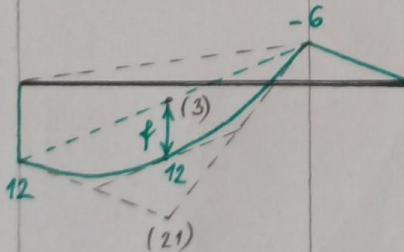
(B)

$$w_b = ?$$

$$EI = 1,35 \cdot 10^4 \text{ kPa} \cdot \text{m}^4$$

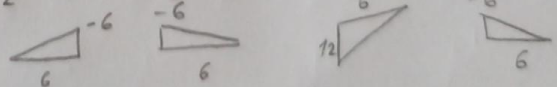


(M)

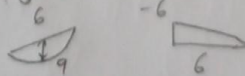


$$f = \frac{1}{8} \cdot 2 \cdot 6^2 = 9$$

$$w_b = \frac{1}{EI} \left\{ \left(\frac{1}{2} (-6) \cdot 6 \right) \cdot \left[\frac{1}{3} (-6) \right] + \left(\frac{1}{2} \cdot 12 \cdot 6 \right) \cdot \left[\frac{2}{3} \cdot (-6) \right] + \right.$$



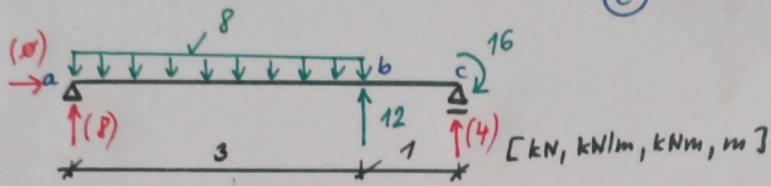
$$+ \left(\frac{2}{3} \cdot 6 \cdot 9 \right) \cdot \left[\frac{1}{2} \cdot (-6) \right] \right\}$$



$$\underline{\underline{w_b = \frac{-216}{EI} = \frac{-216}{1,35 \cdot 10^4} = -0,016 \text{ m}}}$$

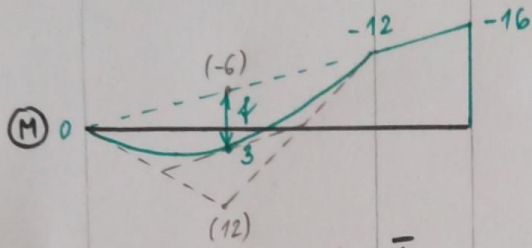
(M)

(c)



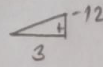
$$W_b = 2$$

$$EI = 32 \cdot 10^3 \text{ kPa} \cdot \text{m}^4$$

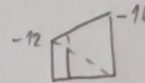
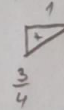


$$f = \frac{1}{8} \cdot 8 \cdot 3^2 = 9$$

$$W_b = \frac{1}{EI} \left\{ \left(\frac{1}{2} (-12) \cdot 3 \right) \cdot \left[\frac{2}{3} \cdot \frac{3}{4} \right] + \left(\frac{2}{3} \cdot 9 \cdot 3 \right) \cdot \left[\frac{1}{2} \cdot \frac{3}{4} \right] + \right.$$



$$+ \left(\frac{1}{2} \cdot 1 \cdot \frac{3}{4} \right) \left[\frac{2}{3} (-12) + \frac{1}{3} (-16) \right] \}$$



$$W_b = \frac{-29}{4EI} = \frac{-29}{4 \cdot 32 \cdot 10^3} = -2,265625 \cdot 10^{-4} \text{ m}$$

