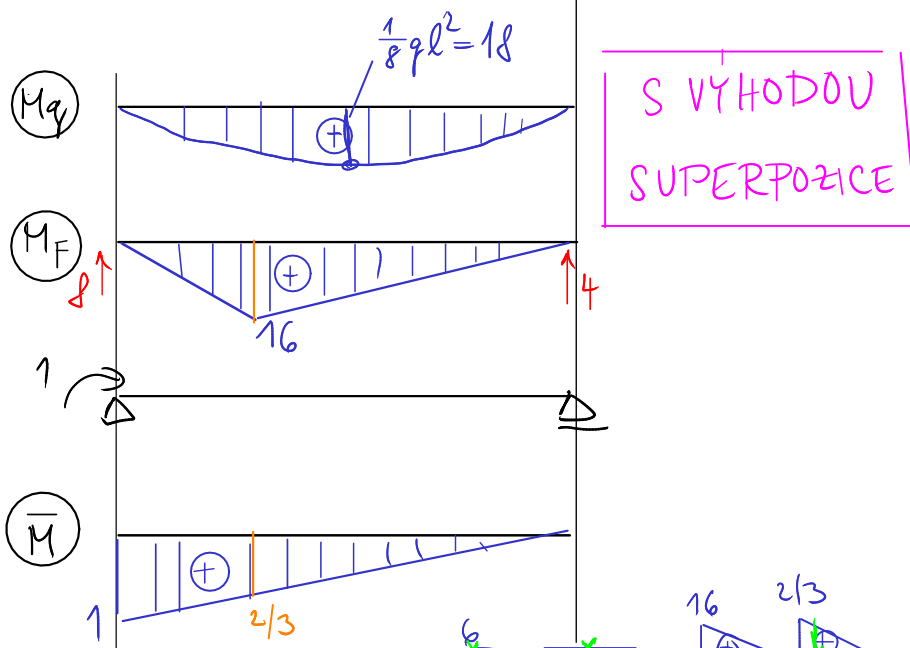
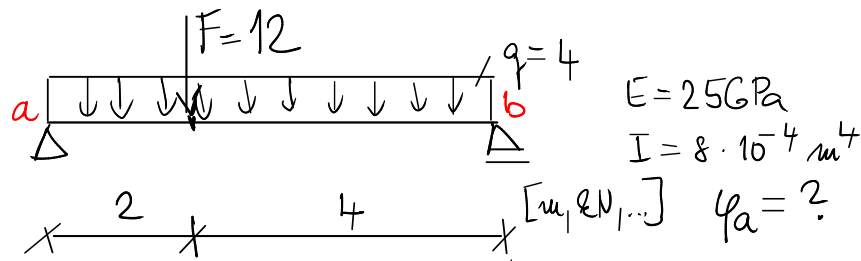
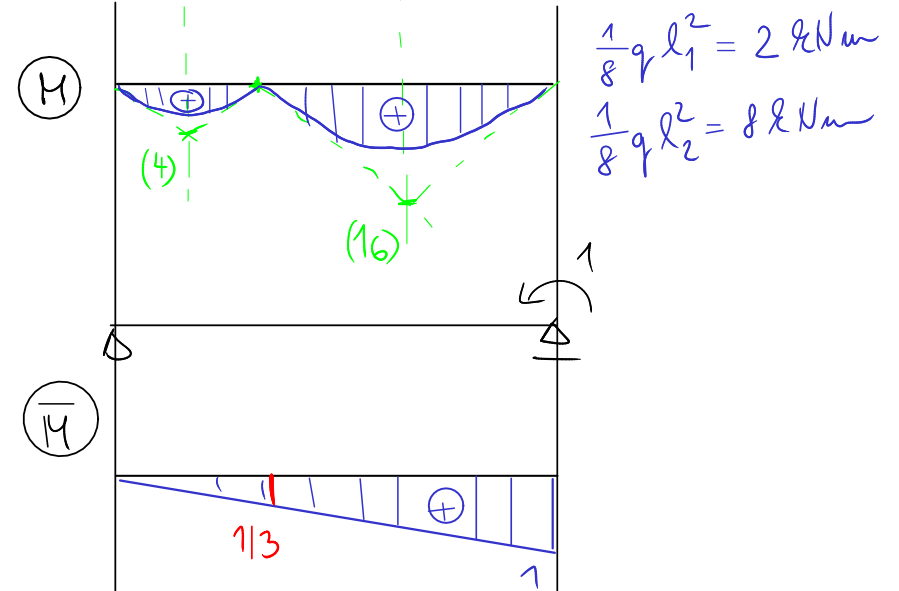
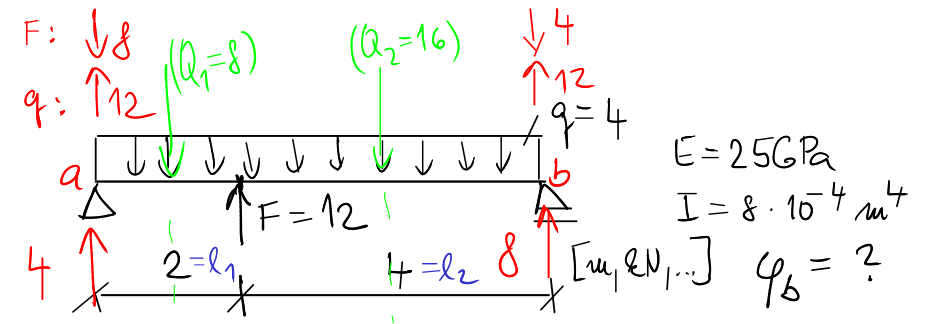




$$\begin{aligned}
 \varphi_a &= \frac{1}{EI} \int M \bar{M} dx = \frac{1}{EI} \left[+ \left(\frac{2}{3} \cdot 6 \cdot 18 \right) \left(\frac{1}{2} \cdot 1 \right) + \left(\frac{1}{2} \cdot 16 \cdot 4 \right) \left(\frac{2}{3} \cdot \frac{2}{3} \right) \right. \\
 &\quad \left. + \left(\frac{1}{2} \cdot 2 \cdot 16 \right) \left(\frac{2}{3} \cdot \frac{2}{3} + \frac{1}{3} \cdot 1 \right) \right] = \frac{6216}{EI} = \\
 &= \frac{6216}{25 \cdot 10^6 \cdot 8 \cdot 10^{-4}} = \underline{\underline{3,13 \cdot 10^{-3} \text{ rad}}}
 \end{aligned}$$



$$\begin{aligned}
 \varphi_b &= \frac{1}{EI} \int M \bar{M} dx = \frac{1}{EI} \left[+ \left(\frac{2}{3} \cdot 2 \cdot 2 \right) \cdot \left(\frac{1}{2} \cdot \frac{1}{3} \right) \right. \\
 &\quad \left. + \left(\frac{2}{3} \cdot 4 \cdot 8 \right) \cdot \left(\frac{11}{2} \cdot \frac{1}{2} \right) \right] = \frac{1416}{EI} = \underline{\underline{0,73 \cdot 10^{-3} \text{ rad}}}
 \end{aligned}$$