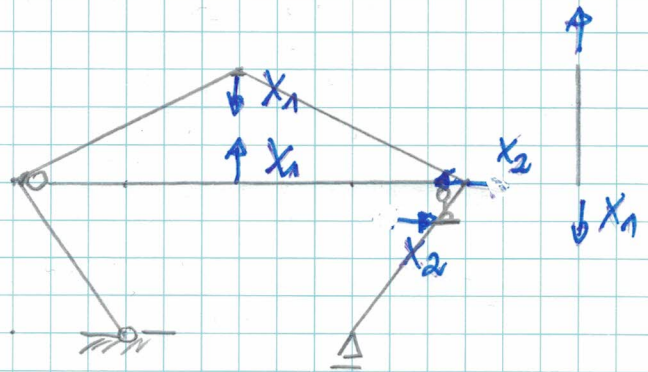
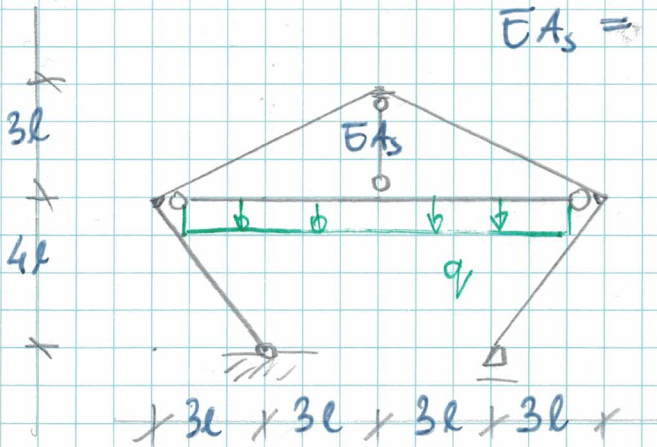


Kolloquium 1.2. MK1 r.a. 2024/25

$Ey = \text{const.}$ $EA \rightarrow \infty$

$$EA_s = \frac{Ey}{10 l^2}$$

USW

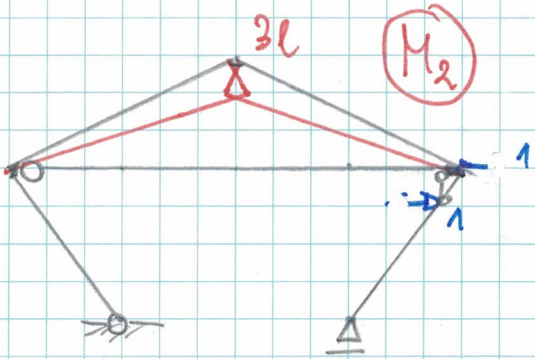


r-nia zgodności

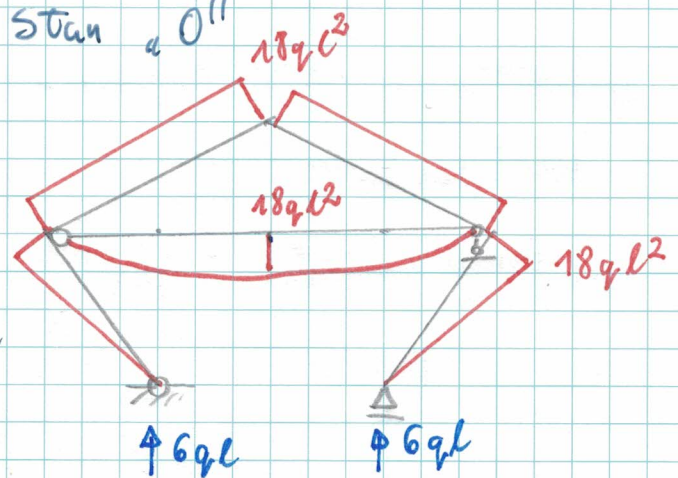
Stan $X_1 = 1$

$$\begin{cases} \delta_{11} X_1 + \delta_{12} X_2 + \delta_{10} = 0 \\ \delta_{21} X_1 + \delta_{22} X_2 + \delta_{20} = 0 \end{cases}$$

Stan $X_2 = 1$



Stan $X_2 = 0$



$$\delta_{11} = \frac{1}{Ey} \left[2 \cdot \frac{1}{2} \cdot 3l \cdot 6l \cdot \frac{2}{3} \cdot 3l \right]$$

$$+ 2 \cdot \frac{1}{2} \cdot 3l \cdot 3\sqrt{5}l \cdot \frac{2}{3} \cdot 3l \Big] +$$

$$+ \frac{1}{EA_s} \cdot [1 \cdot 3l \cdot 1] = 106,249 \frac{l^3}{Ey}$$

$$\delta_{12} = \frac{1}{Ey} \left[2 \cdot \frac{1}{2} \cdot 3l \cdot 3\sqrt{5}l \cdot \frac{2}{3} \cdot 3l \right] = 40,249 \frac{l^3}{Ey}$$

$$\delta_{22} = \delta_{12} = 40,249 \frac{l^3}{Ey}$$

$$\delta_{10} = \frac{1}{EI} \left[2 \cdot \frac{1}{2} \cdot 18ql^2 \cdot 6l \cdot \left(-\frac{2}{3} \cdot 3l\right) + 2 \cdot \frac{2}{3} \cdot \frac{q(6l)^2}{8} \cdot 6l \cdot \left(-\frac{1}{2} \cdot 3l\right) + 2 \cdot \frac{1}{2} \cdot 3l \cdot 3\sqrt{3}l \cdot (-18ql^2) \right] = -632,243 \frac{ql^4}{EI}$$

$$\delta_{20} = \frac{1}{EI} \left[2 \cdot \frac{1}{2} \cdot 3l \cdot 3\sqrt{3}l \cdot (-18ql^2) \right] = -362,243 \frac{ql^4}{EI}$$

$$X_1 = 4,09 ql$$

$$X_2 = 4,91 ql$$

