

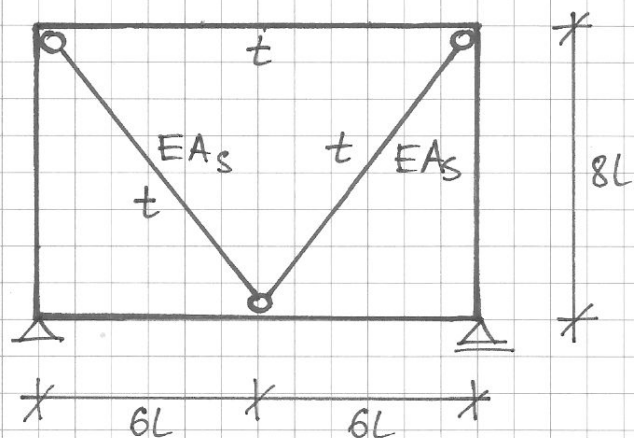
Kołokwium z MK1, 1.2a, r.ak. 2013/14

Dobrać schemat zastępczy. Obliczyć δ_{ij}, δ_{i0}

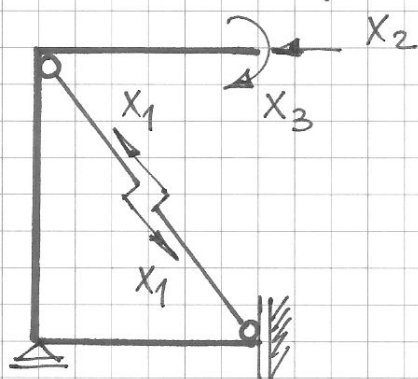
$EJ = \text{const.}$

$EA = \infty$

$EA_s = \text{const.}$

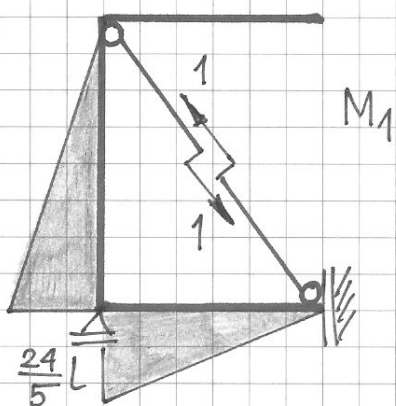


Schemat zastępczy uwzględniający symetrię zadania

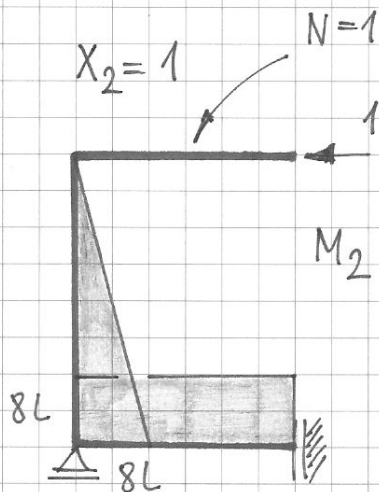


W obliczeniach δ_{ij} należy uwzględnić podłużną odkształcalność prętów, w których $EA = EA_s$.

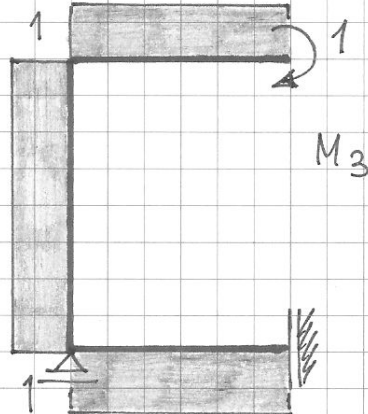
$X_1 = 1$



$X_2 = 1$



$X_3 = 1$



$$\delta_{11} = \frac{2688}{25} \frac{L^3}{EJ} + 10 \frac{L}{EA_s}$$

$$\delta_{23} = \delta_{32} = -80 \frac{L^2}{EJ} \quad \delta_{30} = 0$$

$$\delta_{12} = \delta_{21} = -\frac{1088}{5} \frac{L^3}{EJ}$$

$$\delta_{33} = 20 \frac{L}{EJ}$$

$$\delta_{13} = \delta_{31} = \frac{168}{5} \frac{L^2}{EJ}$$

$$\delta_{10} = 10 \alpha_t t L$$

$$\delta_{22} = \frac{1664}{3} \frac{L^3}{EJ}$$

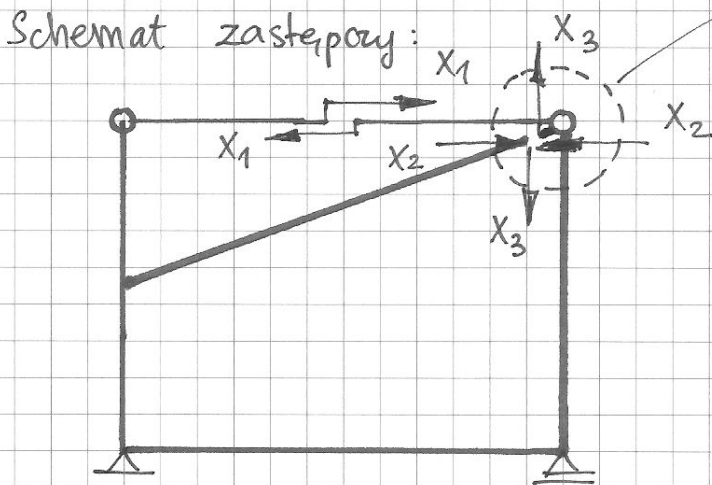
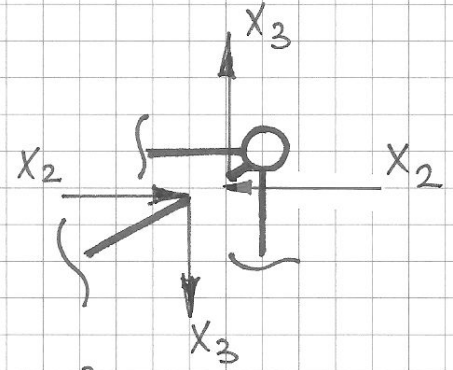
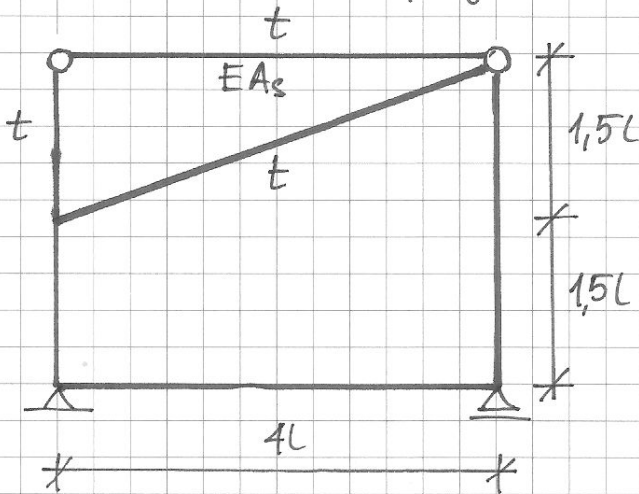
$$\delta_{20} = -6 \alpha_t t L$$

Kolokwium z MK1, 1.2b, r. ak. 2013/14

Dobrać schemat zastępczy. Obliczyć δ_{ij}, δ_{io} . $EJ = \text{const.}$

$EA = \infty$

$EA_s = \text{const.}$



$$\delta_{11} = 54 \frac{L^3}{EJ} + 4 \frac{L}{EA_s}$$

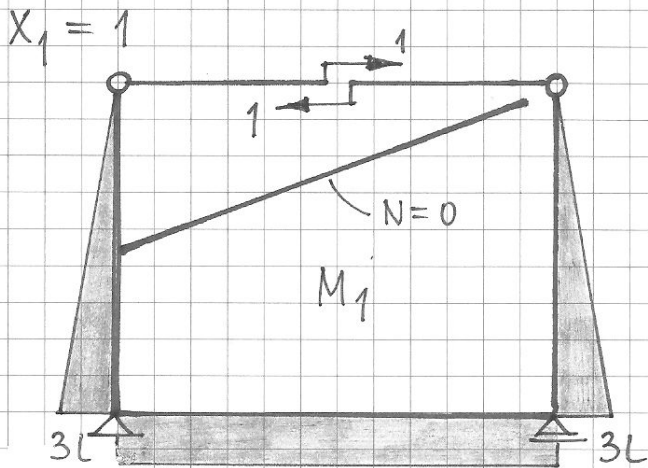
$$\delta_{12} = \delta_{21} = \frac{423}{8} \frac{L^3}{EJ}$$

$$\delta_{13} = \delta_{31} = \frac{75}{2} \frac{L^3}{EJ}$$

$$\delta_{22} = \frac{3}{8} (141 + \sqrt{73}) \frac{L^3}{EJ}$$

$$\delta_{23} = \delta_{32} = \frac{1}{2} (75 + 2\sqrt{73}) \frac{L^3}{EJ}$$

$$\delta_{33} = \frac{8}{3} (17 + \sqrt{73}) \frac{L^3}{EJ}$$



$$\delta_{10} = 4 \alpha t L$$

$$\delta_{30} = -\frac{3}{2} \alpha t L$$

$$\delta_{20} = 4 \alpha t L$$

