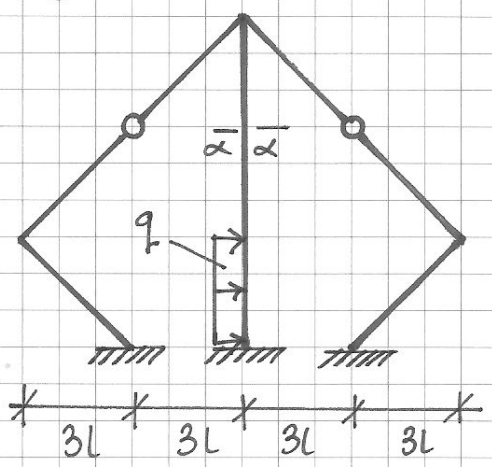
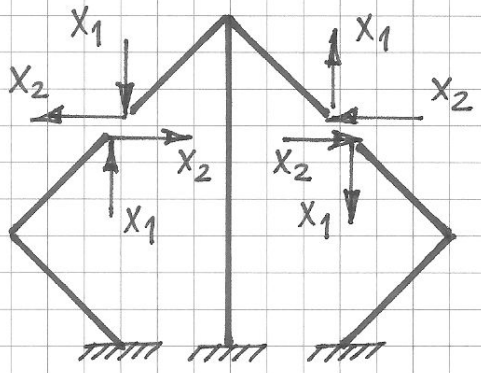
MK1 kolokwium 1.2a r.ak. 2014/2015

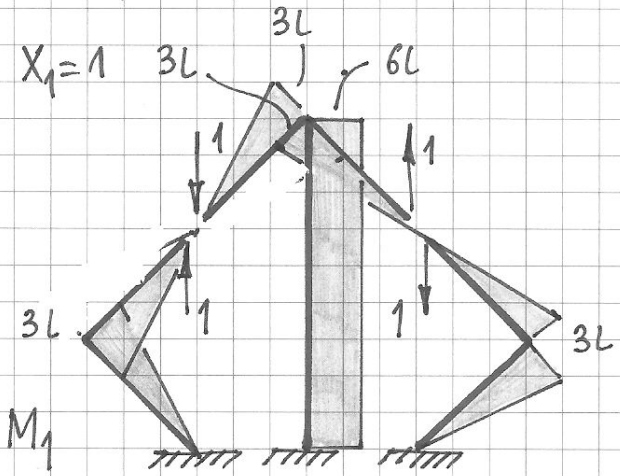
Obliczyć wartość M_α $EJ = const.$ $EA = \infty$

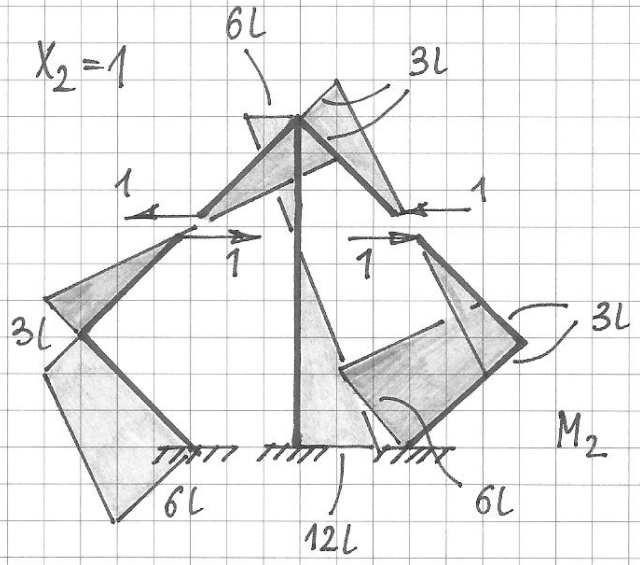


Schemat zastępczy:

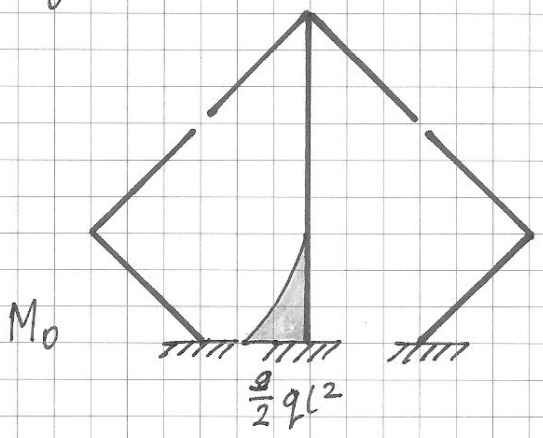


Uwaga: schemat zastępczy uwzględnia antysymetrię zadania





"0"



$$\delta_{11} = 400,368 \frac{L^3}{EJ}$$

$$\delta_{12} = \delta_{21} = 60,177 \frac{L^3}{EJ}$$

$$\delta_{22} = 553,103 \frac{L^3}{EJ}$$

$$\delta_{10} = -27 \frac{qL^4}{EJ}$$

$$\delta_{20} = -47,25 \frac{qL^4}{EJ}$$

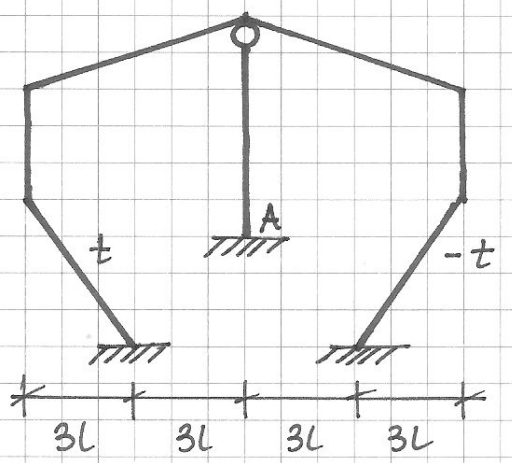
$$X_1 = 0,0561\, qL$$

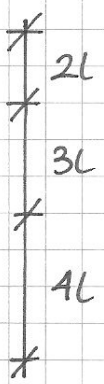
$$X_2 = 0,079\, qL$$

$$M_\alpha = X_1 \cdot 6L = 0,337\, qL^2$$

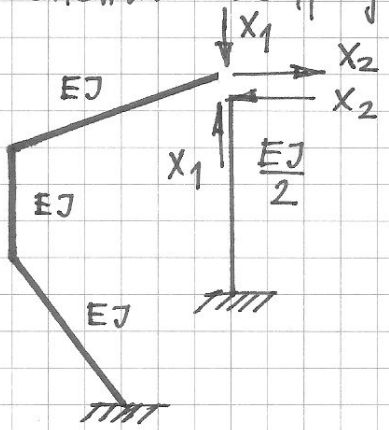
MK1 kolokwium 1.2b r.ak. 2014/2015

Obliczyć moment w środkowym utwierdzeniu. $EJ = const.$



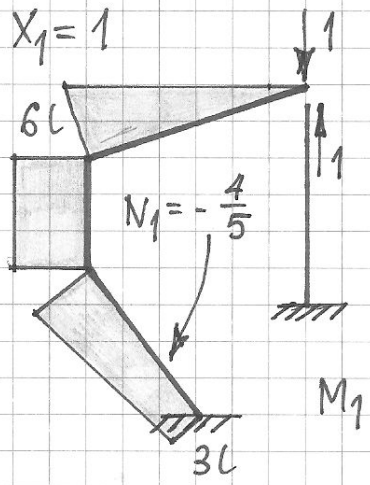


Schemat zastępczy:

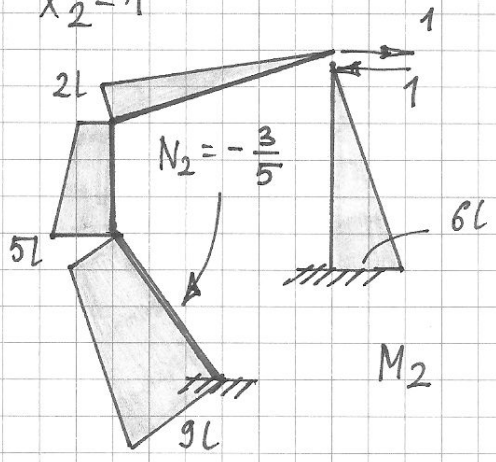


Uwaga: schemat zastępczy uwzględnia antysymetrię obciążenia

$X_1 = 1$



$X_2 = 1$



$$\delta_{11} = 288{,}895 \frac{l^3}{EJ}$$

$$\delta_{12} = \delta_{21} = 240{,}798 \frac{l^3}{EJ}$$

$$\delta_{22} = 443{,}099 \frac{l^3}{EJ}$$

$$\delta_{10} = -4 \alpha_t t l$$

$$\delta_{20} = -3 \alpha_t t l$$

$$X_1 = 0{,}015 \frac{EJ \alpha_t t}{l^2}$$

$$X_2 = -0{,}001 \frac{EJ \alpha_t t}{l^2}$$

$$M_A = 6l \cdot X_2 = -0{,}006 \frac{EJ \alpha_t t}{l}$$