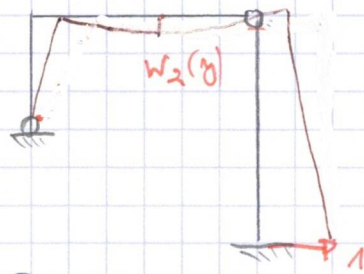


$Ey = \text{const.}$
 $EA \rightarrow \infty$

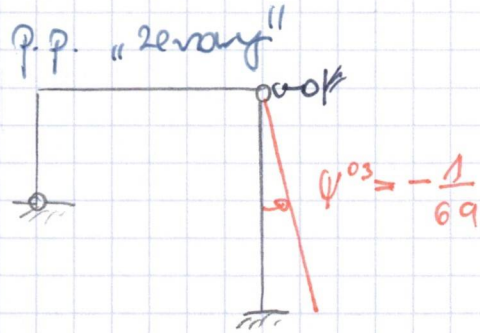
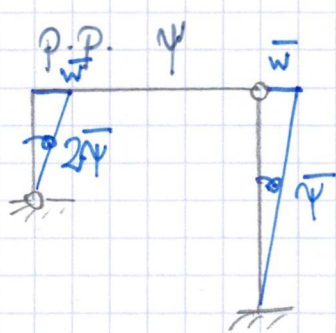
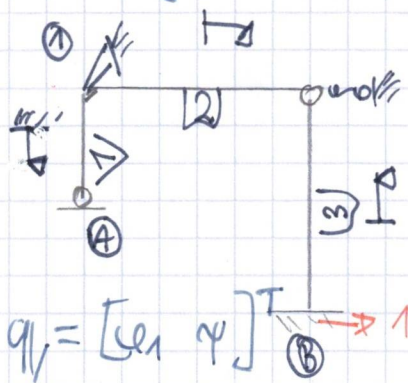


2 tw. Bettiego

$$L_{12} = 1 \cdot w_2(y) + H_A(-1)$$

$$L_{21} = 0 \Rightarrow H_A = w_2(y)$$

Deformacja układu nr 2



$$q_j = [\varphi_1 \ \psi]^T$$

n. r. MP $\Phi_1^{(1)} + \Phi_1^{(2)} = 0$ (1) $\Phi_1^{(1)} 2\bar{\psi} + \Phi_B^{(3)} \bar{\psi} = 0$ (2)

mom. wyj. $\Phi_B^{(3)} = \frac{3Ey}{6a} \left[+\frac{1}{6a} \right] = \frac{1}{12} \frac{Ey}{a^2}$

WT —

$\Phi_1^{(1)} = \frac{3Ey}{6a} (\varphi_1 - 2\psi)$ $\Phi_1^{(2)} = \frac{3Ey}{6a} (\varphi_1) = \frac{Ey}{a} \left(\frac{1}{2} \varphi_1 \right)$

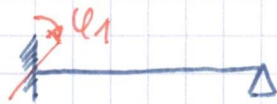
$\Phi_B^{(3)} = \frac{3Ey}{6a} (-\psi) + \frac{1}{12} \frac{Ey}{a^2} = \frac{Ey}{a} \left(-\frac{1}{2} \psi \right) + \frac{1}{12} \frac{Ey}{a^2}$

$$\frac{Ey}{a} \left[\begin{array}{c|c} 1,5 & -2 \\ \hline -2 & 4,5 \end{array} \right] \begin{bmatrix} \varphi_1 \\ \psi \end{bmatrix} = \frac{Ey}{a^2} \begin{bmatrix} 0 \\ \frac{1}{12} \end{bmatrix}$$

$\varphi_1 = 0,0606 \frac{1}{a}$
 $\psi = 0,0455 \frac{1}{a}$

Ugięcia pręta nr 2

$$w(x) = C_0 + C_1 x + C_2 x^2 + C_3 x^3$$



$$\varphi(x) = \frac{dw}{dx} = C_1 + 2C_2 x + 3C_3 x^2$$

$$M(x) = -EJ \frac{d^2 w}{dx^2} = -EJ (2C_2 + 6C_3 x)$$

$$w(0) = 0 \Rightarrow C_0 = 0$$

$$\varphi(0) = \varphi_1 \Rightarrow C_1 = 0,0606 \frac{1}{a}$$

$$w(6a) = 0 \Rightarrow 0,0606 \frac{1}{a} \cdot 6a + C_2 (6a)^2 + C_3 (6a)^3 = 0$$

$$M(6a) = 0 \Rightarrow -EJ (2C_2 + 36a \cdot C_3) = 0$$

$$C_2 = - \frac{0,0152}{a^2}$$

$$C_3 = \frac{0,000842}{a^3}$$

$$w(x) = 0,0606 \frac{x}{a} - 0,0152 \frac{x^2}{a^2} + 0,000842 \frac{x^3}{a^3}$$

$$H_A(y) = w(y)$$