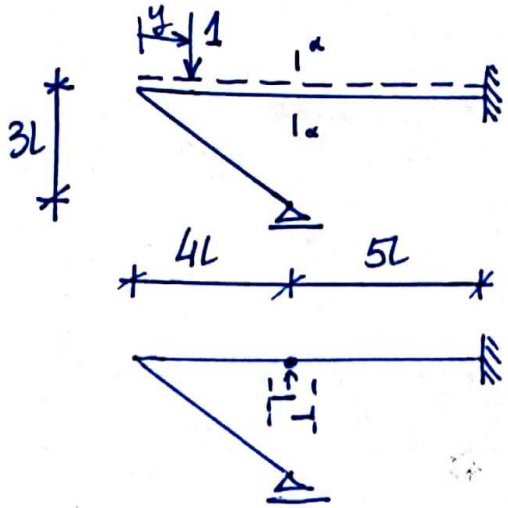
Kol 1.2

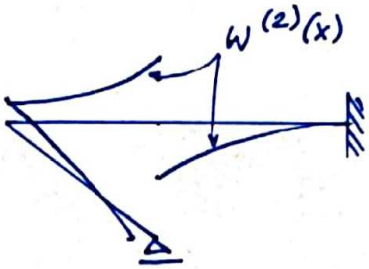


$lwT_\alpha = ?$ $\quad EI = const$ $\quad EA = \infty$

$L_{12} = 1 \cdot w^{(2)}(y) - T_\alpha(y) \cdot 1$

$L_{21} = 0$

$lwT_\alpha = T_\alpha(y) = w^{(2)}(y)$



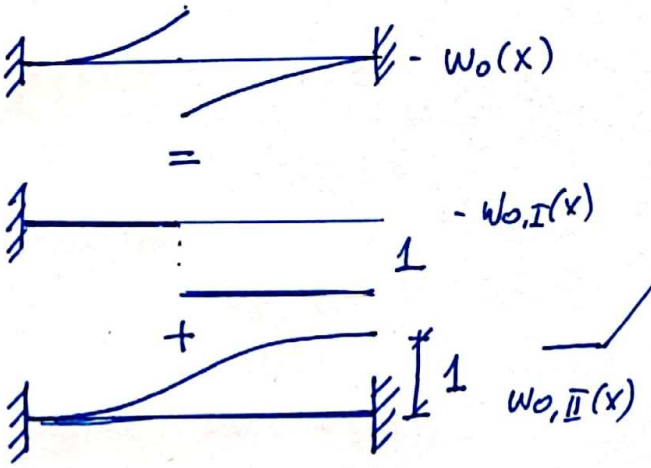
$$w^{(2)}(x) = w_q^{(2)}(x) + w_0^{(2)}(x) = w_q^{(2)}(x) + w_{0,II}^{(2)}(x) + w_{0,I}^{(2)}(x) = w_{spr}^{(2)}(x) + w_{0,I}^{(2)}(x)$$

W dalszym opisie pominięto indeks (2)

$$w_{spr}(x) = A_0 + A_1 x + A_2 x^2 + A_3 x^3$$

$w_{spr}(0) = \psi \cdot 4L \qquad w_{spr}(9L) = -1$

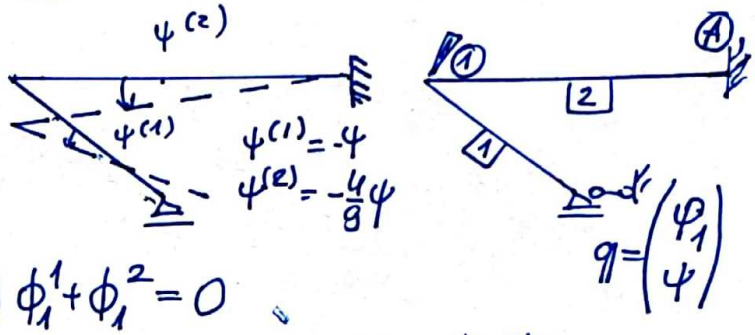
$\varphi_{spr}(0) = \varphi_1 \qquad \varphi_{spr}(9L) = 0$



$$w_{0,I}(x) = \begin{cases} 0, & x \le 4L \\ 1, & x > 4L \end{cases}$$

$$W(x) = \begin{cases} -0{,}096 - 0.050\frac{x}{L} - 0.022\frac{x^2}{L^2} + 0.002\frac{x^3}{L^3} & \text{dla } x \le 4L \\ 0.903 - 0.050\frac{x}{L} - 0.022\frac{x^2}{L^2} + 0.002\frac{x^3}{L^3} & \text{dla } x > 4L \end{cases}$$

$lwT_\alpha = W(y)$



1) $\phi_1^1 + \phi_1^2 = 0$

2) $\phi_1^1(-\bar{\psi}) + (\phi_1^2 + \phi_A^2)(-\frac{4}{9}\bar{\psi}) = 0$

$\phi_1^{02} = \frac{2EI}{9L}(-3\psi^0) \qquad \psi^0 = -\frac{1}{9L}$

$\phi_1^{02} = \frac{2}{27}\frac{EI}{L^2}$

$\phi_A^{02} = \frac{2}{27}\frac{EI}{L^2}$

$\phi_1^1 = \frac{3EI}{5L}(\varphi_1 + \psi)$

$\phi_1^2 = \frac{2EI}{9L}(2\varphi_1 + 3\cdot\frac{4}{9}\psi) + \phi_1^{02}$

$\phi_A^2 = \frac{2EI}{9L}(\varphi_1 + 3\cdot\frac{4}{9}\psi) + \phi_A^{02}$

$$\frac{EI}{L}\begin{pmatrix} \frac{47}{45} & \frac{121}{135} \\ \frac{121}{135} & \frac{1049}{1215} \end{pmatrix}\begin{pmatrix} \varphi_1 \\ \psi \end{pmatrix} = \frac{EI}{L^2}\begin{pmatrix} -\frac{2}{27} \\ -\frac{16}{243} \end{pmatrix}$$

$\downarrow$

$\varphi_1 = -\frac{27}{538}\cdot\frac{1}{L}, \qquad \psi = -\frac{13}{538}\frac{1}{L}$