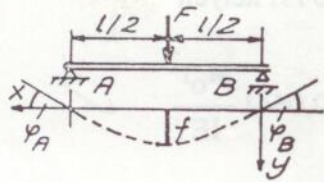


eseteti pl.

A tartó megfogása és terhelése, a rugalmas szál közelítő meggörbült alakja

A rugalmas szál egyenlete és első deriváltja

Elmozdulások és szögelfordulások



$$y = \frac{F}{48IE} (3l^2x - 4x^3)$$

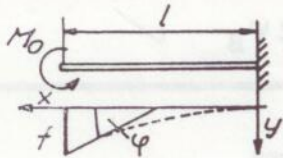
$$y' = \frac{F}{16IE} (l^2 - 4x^2)$$

$$0 \leq x \leq l/2$$

középen

$$f = \frac{Fl^3}{48IE} \checkmark$$

$$\varphi_A = \varphi_B = \frac{Fl^2}{16IE} \checkmark$$

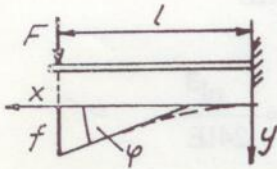


$$y = \frac{M_0}{2IE} x^2$$

$$y' = \frac{M_0}{IE} x$$

$$f = \frac{M_0 l^2}{2IE} \checkmark$$

$$\varphi = \frac{M_0 l}{IE} \checkmark$$

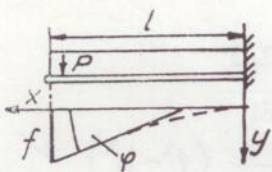


$$y = \frac{F}{6IE} (3lx^2 - x^3)$$

$$y' = \frac{F}{2IE} (2lx - x^2)$$

$$f = \frac{Fl^3}{3IE} \checkmark$$

$$\varphi = \frac{Fl^2}{2IE} \checkmark$$

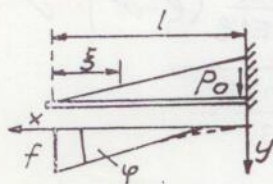


$$y = \frac{p}{24IE} (6l^2x^2 - 4lx^3 + x^4)$$

$$y' = \frac{p}{6IE} (3l^2x - 3lx^2 + x^3)$$

$$f = \frac{pl^4}{8IE} \checkmark$$

$$\varphi = \frac{pl^3}{6IE} \checkmark$$

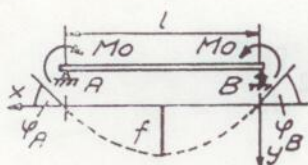


$$y = \frac{p_0}{120IEl} (\xi^5 - 5l^4\xi + 4l^5)$$

$$y' = \frac{p_0}{24IEl} (\xi^4 - l^4); \xi = l - x$$

$$f = \frac{p_0 l^4}{30IE} \checkmark$$

$$\varphi = \frac{p_0 l^3}{24IE} \checkmark$$



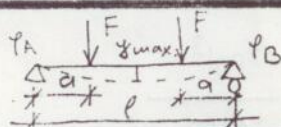
$$y = \frac{M_0}{2IE} (lx - x^2)$$

$$y' = \frac{M_0}{2IE} (l - 2x)$$

középen

$$f = \frac{M_0 l^2}{8IE} \checkmark$$

$$\varphi_A = \varphi_B = \frac{M_0 l}{2IE} \checkmark$$



$$\varphi_A = \varphi_B = \frac{Fa}{2EI} (l - a) \checkmark$$

$$f_{max} = \frac{Fa}{24EI} (3l^2 - 4a^2) \checkmark$$