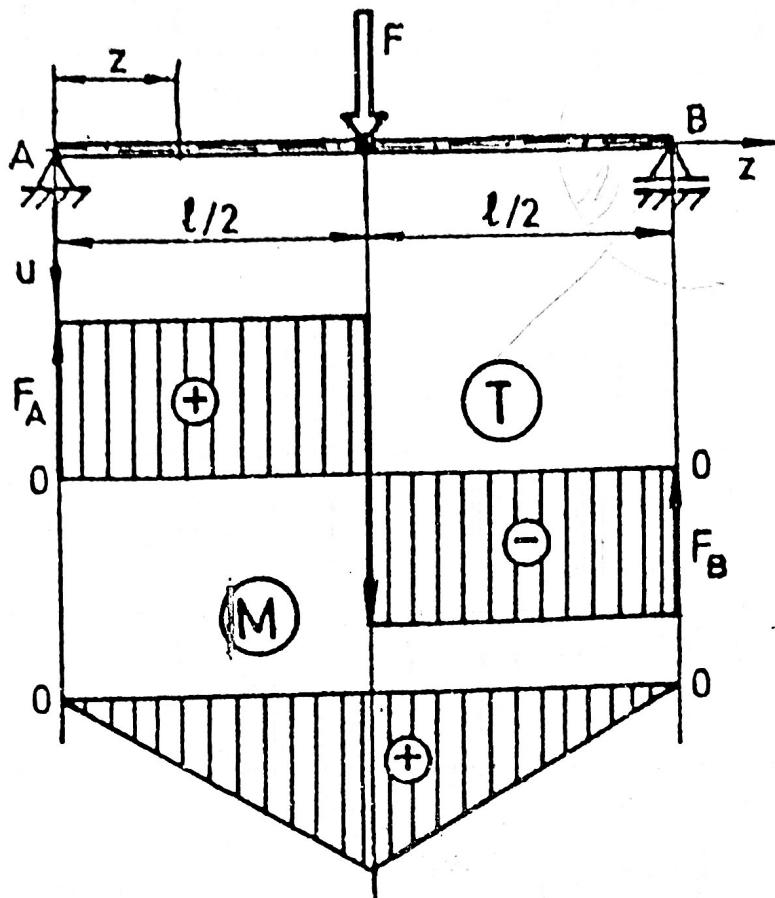


1.2.



$$F_A = F_B = \frac{F}{2}$$

$$T(z) = F \left( \frac{1}{2} \left| \left| -1 \right. \right. \right)$$

$$M(z) = \frac{Fl}{2} \left[ \left( \frac{z}{l} \right) \left| \left| -2 \left( \frac{z}{l} \right) + 1 \right. \right. \right]$$

$$M_{\max} = \frac{Fl}{4}, \quad z = \frac{l}{2}$$

$$El u''(z) = -M(z)$$

$$u'(z) = \frac{Fl^2}{12EI} \left\{ \left[ \frac{3}{4} - 3 \left( \frac{z}{l} \right)^2 \right] \left| \left| -\frac{3}{2} \left[ 2 \left( \frac{z}{l} \right) - 1 \right]^2 \right. \right. \right\}$$

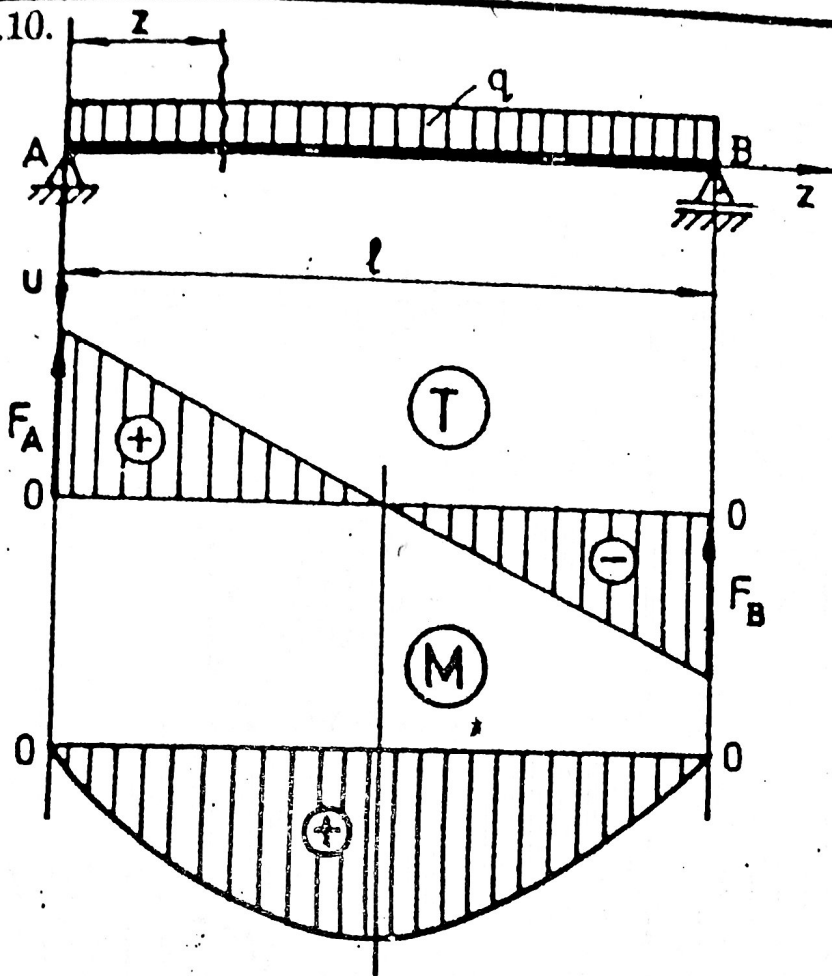
$$u(z) = \frac{Fl^3}{12EI} \left\{ \left( \frac{z}{l} \right) \left[ \frac{3}{4} - \left( \frac{z}{l} \right)^2 \right] \left| \left| + \frac{1}{4} \left[ 2 \left( \frac{z}{l} \right) - 1 \right]^3 \right. \right. \right\}$$

$$\left( 2 \cdot \frac{2a}{4a} - 1 \right)^3$$

$$\alpha = -\beta = \frac{Fl^2}{16EI}$$

$$f_{\max} = \frac{1}{48} \frac{Fl^3}{EI} \quad z = \frac{l}{2}$$

1.10.



$$a = 0; b = l; c = 0$$

$$m = n = \frac{l}{2}; e = l$$

$$F_A = F_B = \frac{ql}{2}$$

$$T(z) = \frac{1}{2} ql \left( 1 - \frac{z}{l} \right)$$

$$M(z) = \frac{1}{2} ql^2 \left[ 1 - \left( \frac{z}{l} \right) \right] \left( \frac{z}{l} \right)$$

$$M_{\max} = \frac{1}{8} ql^2 \quad z = \frac{l}{2}$$

$$EIu''(z) = -M(z)$$

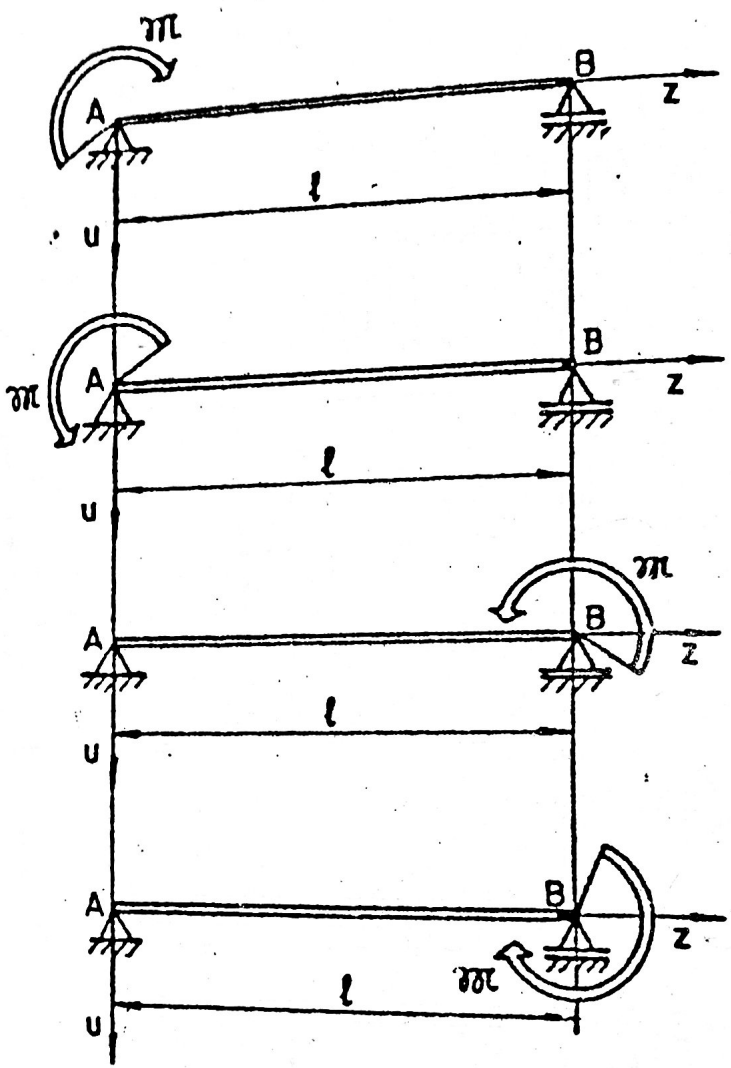
$$u'(z) = \frac{ql^3}{24EI} \left[ 1 - 6 \left( \frac{z}{l} \right)^2 + 4 \left( \frac{z}{l} \right)^3 \right]$$

$$u(z) = \frac{ql^4}{24EI} \left[ \left( \frac{z}{l} \right) - 2 \left( \frac{z}{l} \right)^3 + \left( \frac{z}{l} \right)^4 \right]$$

$$\alpha = -\beta = \frac{ql^3}{24EI}$$

$$f_{\max} = \frac{5}{384} \frac{ql^4}{EI} \quad z = \frac{l}{2}$$

1.22.



$$\alpha = +\frac{\mathcal{M}l}{3EI} \quad \beta = -\frac{\mathcal{M}l}{6EI}$$

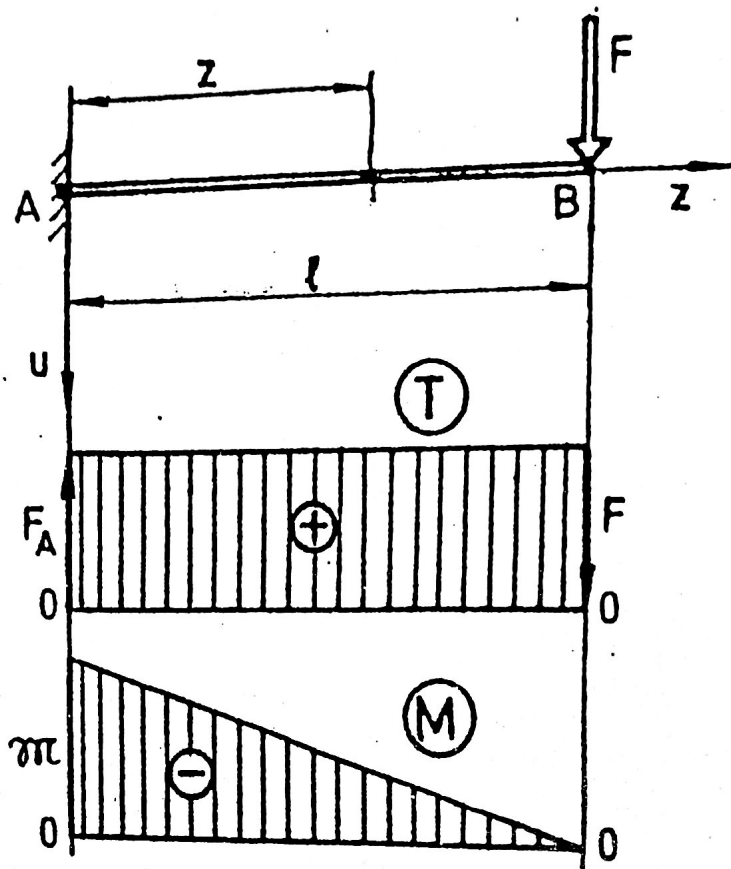
$$\alpha = -\frac{\mathcal{M}l}{3EI} \quad \beta = +\frac{\mathcal{M}l}{6EI}$$

$$\alpha = +\frac{\mathcal{M}l}{6EI} \quad \beta = -\frac{\mathcal{M}l}{3EI}$$

$$\alpha = -\frac{\mathcal{M}l}{6EI} \quad \beta = +\frac{\mathcal{M}l}{3EI}$$

$$\left| f(z=\frac{l}{2}) \right| = \frac{\mathcal{M}l^2}{16EI}; \quad f_{\max} = \frac{\sqrt{3} \mathcal{M}l^2}{27 EI}$$

2.3



$$F_A = F$$

$$\mathcal{M}_A = Fl$$

$$T(z) = F$$

$$M(z) = -Fl \left(1 - \frac{z}{l}\right)$$

$$EIu''(z) = -M(z)$$

$$u'(z) = \frac{Fl^2}{2EI} \left(\frac{z}{l}\right) \left[2 - \left(\frac{z}{l}\right)\right]$$

$$u(z) = \frac{Fl^3}{6EI} \left(\frac{z}{l}\right)^2 \left[3 - \left(\frac{z}{l}\right)\right]$$

$$v(z=l) = \frac{Fl^2}{2EI}$$

$$f(z=l) = \frac{Fl^3}{3EI}$$