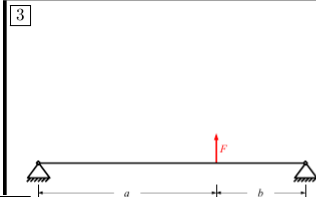


v é a deflexão da linha elástica
 $\theta = v'$ é a inclinação da linha elástica
 $x_{\text{máx}}$ é a coordenada x do ponto de máxima deflexão
 $v_{\text{máx}} = v(x_{\text{máx}})$ é a máxima deflexão
 $\theta_0 = \theta(0)$ é a inclinação em $x = 0$
 $\theta_L = \theta(L)$ é a inclinação em $x = L$

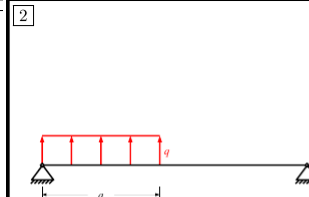


$$v = \begin{cases} \frac{Fbx}{6LEI} (L^2 - b^2 - x^2) & 0 \leq x \leq a \\ \frac{Fa}{6LEI} (x-L)(x^2 - 2Lx + a^2) & a < x \leq L \end{cases}$$

$$\theta = \begin{cases} \frac{Fb}{6LEI} (L^2 - b^2 - 3x^2) & 0 \leq x \leq a \\ \frac{Fa}{6LEI} (3x^2 - 6Lx + a^2 + 2L^2) & a < x \leq L \end{cases}$$

$$\theta_0 = \frac{Fab}{6LEI} (L + b)$$

$$\theta_L = -\frac{Fab}{6LEI} (L + a)$$

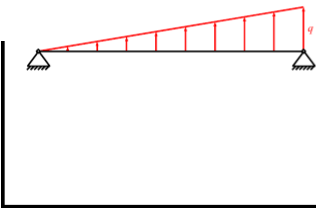


$$v = \begin{cases} \frac{qx}{24LEI} (a^4 - 4a^3L + 4a^2L^2 + 2a^2x^2 - 4aLx^2 + Lx^3) & 0 \leq x \leq a \\ \frac{qa^2}{24LEI} (2x^3 - 6Lx^2 + 4L^2x + a^2x - a^2L) & a < x \leq L \end{cases}$$

$$\theta = \begin{cases} \frac{q}{24LEI} (a^4 - 4a^3L + 4a^2L^2 + 6a^2x^2 - 12aLx^2 + 4Lx^3) & 0 \leq x \leq a \\ \frac{qa^2}{24LEI} (6x^2 - 12Lx + 4L^2 + a^2) & a < x \leq L \end{cases}$$

$$\theta_0 = \frac{qa^2}{24LEI} (a^2 - 4aL + 4L^2)$$

$$\theta_L = -\frac{qa^2}{24LEI} (2L^2 - a^2)$$



$$v = \frac{qx}{360LEI} (7L^4 - 10L^2x^2 + 3x^4)$$

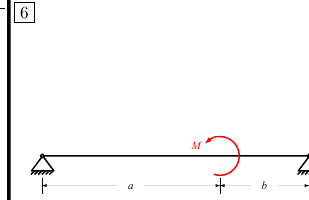
$$\theta = \frac{q}{360LEI} (7L^4 - 30L^2x^2 + 15x^4)$$

$$x_{\text{máx}} = \frac{\sqrt{225 - 30\sqrt{30}}}{15} L$$

$$v_{\text{máx}} = \frac{qL^4}{3375EI} \sqrt{375 + 20\sqrt{30}}$$

$$\theta_0 = \frac{7qL^3}{360EI}$$

$$\theta_L = -\frac{qL^3}{45EI}$$

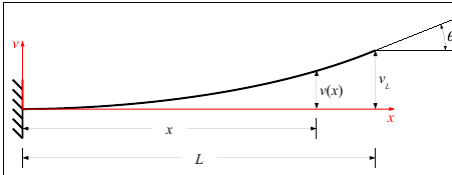


$$v = \begin{cases} \frac{Mx}{6LEI} (x^2 + 2L^2 + 3a^2 - 6aL) & 0 \leq x \leq a \\ \frac{M}{6LEI} (L-x)(6bL - 3b^2 - 3L^2 + 2Lx - x^2) & a < x \leq L \end{cases}$$

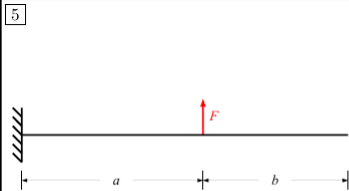
$$\theta = \begin{cases} \frac{M}{6LEI} (3x^2 + 2L^2 + 3a^2 - 6aL) & 0 \leq x \leq a \\ \frac{M}{6LEI} (3x^2 - 6Lx + 5L^2 + 3b^2 - 6bL) & a < x \leq L \end{cases}$$

$$\theta_0 = \frac{M}{6LEI} (2L^2 + 3a^2 - 6aL)$$

$$\theta_L = \frac{M}{6LEI} (3a^2 - L^2)$$



v é a deflexão da linha elástica
 $\theta = v'$ é a inclinação da linha elástica
 $v_L = v(L)$ é a deflexão em $x = L$
 $\theta_L = \theta(L)$ é a inclinação em $x = L$

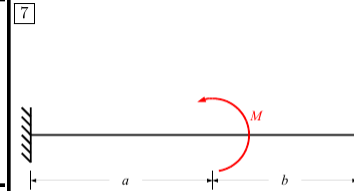


$$v = \begin{cases} \frac{Fx^2}{6EI} (3a - x) & 0 \leq x \leq a \\ \frac{Fa^2}{6EI} (3x - a) & a < x \leq L \end{cases}$$

$$\theta = \begin{cases} \frac{Fx}{2EI} (2a - x) & 0 \leq x \leq a \\ \frac{Fa^2}{2EI} & a < x \leq L \end{cases}$$

$$v_L = \frac{Fa^2}{6EI} (3L - a)$$

$$\theta_L = \frac{Fa^2}{2EI}$$

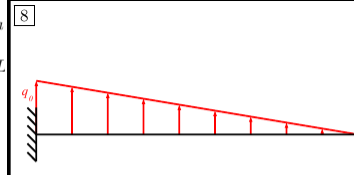


$$v = \begin{cases} \frac{Mx^2}{2EI} & 0 \leq x \leq a \\ \frac{Ma}{2EI} (2x - a) & a < x \leq L \end{cases}$$

$$\theta = \begin{cases} \frac{Mx}{EI} & 0 \leq x \leq a \\ \frac{Ma}{EI} & a < x \leq L \end{cases}$$

$$v_L = \frac{Ma}{2EI} (2L - a)$$

$$\theta_L = \frac{Ma}{EI}$$

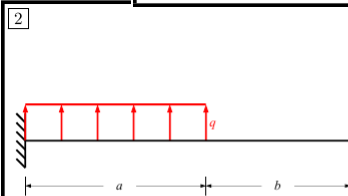


$$v = \frac{qx^2}{120LEI} (10L^3 - 10L^2x + 5Lx^2 - x^3)$$

$$\theta = \frac{qx}{24LEI} (4L^3 - 6L^2x + 4Lx^2 - x^3)$$

$$v_L = \frac{qL^4}{30EI}$$

$$\theta_L = \frac{qL^3}{24EI}$$

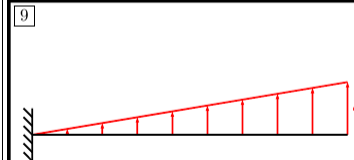


$$v = \begin{cases} \frac{qx^2}{24EI} (6a^2 - 4ax + x^2) & 0 \leq x \leq a \\ \frac{qa^3}{24EI} (4x - a) & a < x \leq L \end{cases}$$

$$\theta = \begin{cases} \frac{qx}{6EI} (3a^2 - 3ax + x^2) & 0 \leq x \leq a \\ \frac{qa^3}{6EI} & a < x \leq L \end{cases}$$

$$v_L = \frac{qa^3}{24EI} (4L - a)$$

$$\theta_L = \frac{qa^3}{6EI}$$



$$v = \frac{qx^2}{120LEI} (20L^3 - 10L^2x + x^3)$$

$$\theta = \frac{qx}{24LEI} (8L^3 - 6L^2x + x^3)$$

$$v_L = \frac{11qL^4}{120EI}$$

$$\theta_L = \frac{qL^3}{8EI}$$