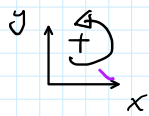


REAKCIE:



$$\sum F_{ix} = R_{Bx} = 0$$

$$\sum F_{iy} = R_A + R_{By} - q \cdot a = 0$$

$$\sum M_{iB} = -R_A \cdot 2a + \frac{q \cdot a}{2} \left(\frac{a}{3} + a \right) - 2q \cdot \frac{a}{2} \cdot \frac{1}{2} \cdot \left(\frac{a}{2} + \frac{2}{6}a \right) + 2q \cdot \frac{a}{2} \cdot \frac{1}{2} \cdot \frac{a}{6} = 0$$

$$R_A \cdot 2a = qa^2 \left(\frac{4}{6} - \frac{1}{2} \left(\frac{3}{6} + \frac{2}{6} \right) + \frac{1}{12} \right)$$

$$R_A = \frac{qa^2}{2a} \left(\frac{4}{6} - \frac{5}{12} + \frac{1}{12} \right) = qa \cdot \frac{1}{2} \left(\frac{8-5+1}{12} \right) = qa \cdot \frac{4}{24} = \frac{1}{6} qa$$

$$R_{By} = \frac{qa}{2} - R_A = qa \left(\frac{1}{2} - \frac{1}{6} \right) = \frac{1}{3} qa$$

$$\sum \overset{\text{SPR}}{M_{i,c}} = R_A \cdot \left(2 + \frac{a}{2}\right) + \frac{q}{2} \cdot \left(\frac{a}{3} + \frac{a}{2}\right) - 2 \left(2q \cdot \frac{a}{8} \cdot \frac{1}{2} \cdot \frac{2}{6} a\right) + R_{By} \frac{a}{2} = 0$$

$$q a^2 \left(-\frac{1}{6} \cdot \frac{3}{2} + \frac{5}{12} - \frac{1}{3} + \frac{1}{6}\right) = 0$$

$$q a^2 \left(-\frac{3}{12} + \frac{5}{12} - \frac{4}{12} + \frac{2}{12}\right) = 0 \Rightarrow 0 = 0$$

① $0 \leq x < a$

$$M_y(x) = R_A \cdot x - \frac{q(x-a)^3}{6a} = \frac{1}{6} q a x - \frac{q x^3}{6a}$$

$$M_y(x=0) = 0$$

$$M_y(x=a) = \frac{1}{6} q a^2 - \frac{q a^3}{6a} = 0$$

$$T(x) = R_A - q \frac{(x-a)^2}{2a} = \frac{1}{6} q a - \frac{q x^2}{2a}$$

$$T(x=a) = \frac{1}{6} q a$$

$$T(x=0) = \frac{1}{6} q a - \frac{q a^2}{2a} = -\frac{1}{3} q a$$

MS (ZIEHUNG):

$$T(x) = 0 \Leftrightarrow \frac{1}{6} q a - \frac{q x^2}{2a} = 0$$

$$x^2 = \frac{1}{6} a \cdot 2a = \frac{1}{3} a^2$$

$$x = a \sqrt{\frac{1}{3}} = a \frac{\sqrt{3}}{3} \approx 0,58 a$$

GOMME JE SUIS EN XIR?

$$\frac{dT}{dx} = q$$

$$\underline{x=0} \text{ bo } q(x=0) = 0$$

$$M_y(x = a \frac{\sqrt{3}}{3}) = \frac{1}{6} q a \cdot \frac{\sqrt{3}}{3} a - \frac{q \left(\frac{\sqrt{3}}{3}\right)^3}{6a} =$$

$$q a^2 \left(\frac{\sqrt{3}}{18} - \frac{3\sqrt{3}}{27}\right) = q a^2 \left(\frac{\sqrt{3}}{18} - \frac{\sqrt{3}}{9}\right) = q a^2 \left(\frac{3\sqrt{3} - 2\sqrt{3}}{54}\right)$$

$$V \left(10 \frac{\gamma}{6} \right) - \gamma^2 \left(10 - 54 \right) - V \left(54 \right)$$

$$= \frac{2\sqrt{3}}{54} \rho a^2 = \frac{\sqrt{3}}{27} \rho a^2 \approx 0,0641 \rho a^2$$

(II) $0 \leq x_2 < a \quad x_2 \Rightarrow x$

$$M_g(x_2=x) = \rho b y \cdot x - \frac{2\rho(x-0)^2}{2} + \frac{2\rho(x-0)^3}{6 \cdot \frac{a}{2}} =$$

$$= \frac{1}{3} \rho a \cdot x - \frac{2\rho x^2}{2} + \frac{2\rho x^3}{3a}$$

$$M_g(x=0) = 0$$

$$M_g(x=a) = \rho a^2 \left(\frac{1}{3} - 1 + \frac{2}{3} \right) = 0$$

$$T(x) = -\rho b y + 2\rho(x-0) - \frac{2\rho(x-0)^2}{2 \cdot \frac{a}{2}} =$$

$$= -\frac{1}{3} \rho a + 2\rho x - \frac{2\rho x^2}{a}$$

$$T(x=0) = -\frac{1}{3} \rho a$$

$$T(x=a) = -\frac{1}{3} \rho a + 2\rho a - 2\rho a = -\frac{1}{3} \rho a$$

$$T(x) = 0 \Leftrightarrow -\frac{1}{3} \rho a + 2\rho x - \frac{2\rho x^2}{a} = 0$$

$$\frac{2\rho}{a} x^2 - 2\rho x + \frac{1}{3} \rho a = 0$$

$$\Delta = (-2\rho)^2 - 4 \left(\frac{2\rho}{a} \right) \cdot \frac{1}{3} \rho a = 4\rho^2 - \frac{8}{3} \rho^2 = \frac{4}{3} \rho^2$$

$$x_{1,2} = \frac{2\rho \pm \sqrt{\frac{4}{3} \rho^2}}{2 \cdot \frac{2\rho}{a}} = \left(\frac{2 \pm \sqrt{\frac{4}{3}}}{4} \right) a = \left(\frac{1}{2} \pm \frac{1}{6} \sqrt{3} \right) a$$

$$x_1 = 0,78 a \quad | \quad x_2 = 0,21 a$$

$$T(x = \frac{a}{2}) = \rho a \left(-\frac{1}{3} + 2 \cdot \frac{1}{2} - 2 \cdot \frac{1}{4} \right) = \frac{1}{6} \rho a$$

n. 77

$\mu = \frac{1}{2} \pm \frac{\sqrt{3}}{2} i$

$$\left\{ \begin{array}{l} \rho_g(x = \left(\frac{1}{2} + \frac{\sqrt{3}}{2} i\right) \alpha) = \rho^2 \left(\frac{1}{2} \cdot 0,78 - (0,78)^2 + \frac{2}{3} (0,78)^3 \right) = \rho^2 (-0,032) \\ \rho_g(x = \left(\frac{1}{2} - \frac{\sqrt{3}}{2} i\right) \alpha) = \rho^2 \left(\frac{1}{2} \cdot 0,21 - (0,21)^2 + \frac{2}{3} (0,21)^3 \right) = \rho^2 (0,032) \end{array} \right.$$