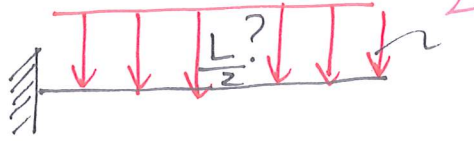


2.4.102

GIVET :

ANTAR  
symmetri  $\Rightarrow$



$$\delta = 1400 \text{ mm.}$$

$$E = 200 \text{ GPa}$$

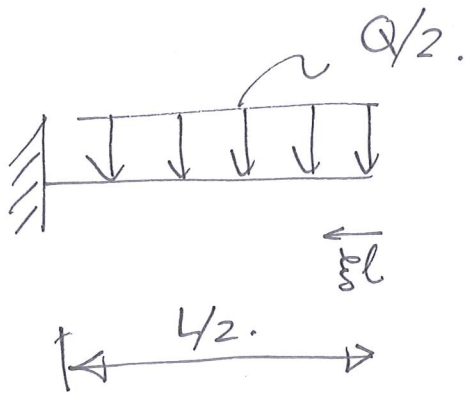
$$\rho = 7850 \text{ kg/m}^3$$

$$A = \pi r^2$$

$$r = 4 \text{ mm}$$

SÖKT :  $L?$

LÖSNING :



$$\Rightarrow \delta(0) = \frac{Q/2 (L/2)^3}{24EI} (3)$$

$$\delta = \frac{QL^3}{128EI}$$

$$\text{där } Q = \rho g A L \Rightarrow \delta = \frac{\rho g A L^4}{128EI} =$$

$$= \left\{ \begin{array}{l} A = \pi r^2 \\ I = \frac{\pi r^4}{4} \end{array} \right\} \Rightarrow \delta = \frac{\rho g L^4}{32Er^2} \Rightarrow L = \sqrt[4]{\frac{32\delta E r^2}{\rho g}}$$

$$L \approx 6.6 \text{ m}$$

$$Q = 7.850 \frac{\text{kg}}{\text{m}^3} \cdot \frac{6.566 \text{ m} \cdot \pi (4)^2 \text{ mm}}{1000^3 \text{ mm}} \text{ m}^3 = \underline{\underline{2.6 \text{ kg}}}$$