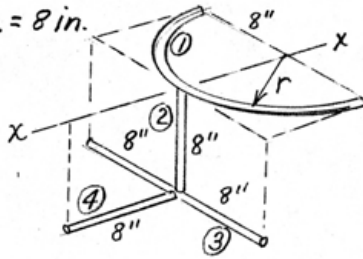


B/41

$$\mu = \text{weight/in.} = \frac{0.667}{12} = 0.0556 \text{ lb/in.}$$

$$r = a = 8 \text{ in.}$$



mass per unit length is

$$\rho = \frac{0.0556}{32.2(12)} = 1.438(10^{-4}) \frac{\text{lb-sec}^2}{\text{in.}^2}$$

$$m_1 = \pi r \rho = \pi a \rho$$

$$m_2 = a \rho$$

$$m_3 = 2a \rho$$

$$m_4 = a \rho$$

$$\textcircled{1} \quad I_{xx} = \frac{1}{2} m_1 r^2 = \frac{1}{2} \pi a \rho r^2 = \frac{1}{2} \pi \rho a^3$$

$$\textcircled{2} \quad I_{xx} = \frac{1}{3} m_2 a^2 = \frac{1}{3} \rho a^3$$

$$\textcircled{3} \quad I_{xx} = \frac{1}{12} m_3 (2a)^2 + m_3 a^2 = \frac{4}{3} (2a \rho) a^2 = \frac{8}{3} \rho a^3$$

$$\textcircled{4} \quad I_{xx} = m_4 a^2 = \rho a^3$$

$$\text{Total } I_{xx} = \rho a^3 \left( \frac{\pi}{2} + \frac{1}{3} + \frac{8}{3} + 1 \right) = 5.57 \rho a^3$$

$$= 5.57 (1.438)(10^{-4})(8^3) = \underline{0.410 \text{ lb-in.-sec}^2}$$