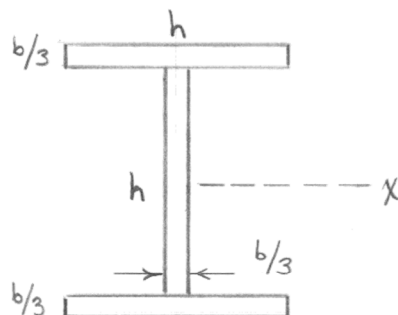


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For area (a),
 $I_x = \frac{1}{12} b h^3$



For area (b),

$$I_x = \frac{1}{12} \frac{b}{3} h^3 + 2 \left[\frac{1}{12} h \left(\frac{b}{3} \right)^3 + h \frac{b}{3} \left(\frac{h}{2} + \frac{b}{6} \right)^2 \right]$$

$$= \frac{h b}{9} \left(\frac{7}{4} h^2 + \frac{2}{9} b^2 + h b \right)$$

If $h = 200 \text{ mm}$ and $b = 60 \text{ mm}$, we have

$$(a) \quad I_x = \frac{1}{12} (60) (200)^3 = 40 (10^6) \text{ mm}^4$$

$$(b) \quad I_x = \frac{200(60)}{9} \left(\frac{7}{4} (200)^2 + \frac{2}{9} (60)^2 + 200(60) \right)$$

$$= 110.4 (10^6) \text{ mm}^4$$

$$\text{Percent increase } n = \frac{110.4 - 40}{40} (100\%) = \underline{176.0\%}$$

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