

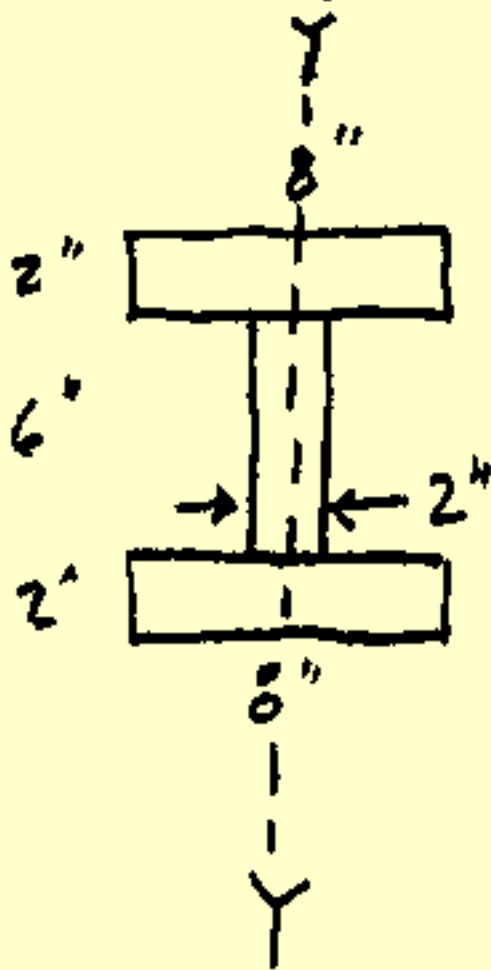
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DETERMINE THE CRITICAL SLENDERNESS RATIO FOR EACH OF THE FOLLOWING, ABOUT THE WEAK (Y-Y) AXIS, USE 10' LENGTH



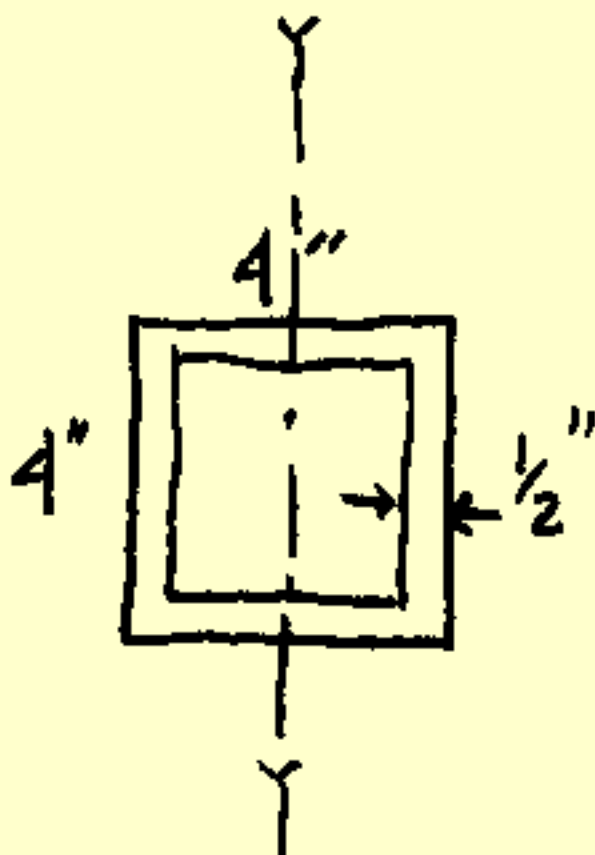
$$I_y = \frac{10(8)^3}{12} - 2\left(\frac{6(3)^3}{12}\right) - 2(3(6))(2.5^2)$$

$$= 174.67 \text{ in}^4$$

$$A = 2(2)(8) + 2(6) = 44 \text{ in}^2$$

$$r_y = \sqrt{\frac{I_y}{A}} = \sqrt{\frac{174.67}{44}} = 1.992 \text{ in}$$

$$\frac{Kl}{r_y} = \frac{1(120)}{1.992} = 60.22$$



$$I_y = \frac{4(4)^3}{12} - \frac{3(3)^3}{12} = 14.583 \text{ in}^4$$

$$A = 4^2 - 3^2 = 7 \text{ in}^2$$

$$r_y = \sqrt{\frac{I_y}{A}} = \sqrt{\frac{14.583}{7}} = 1.443 \text{ in}$$

$$\frac{Kl}{r} = \frac{1(120)}{1.443} = 83.16$$