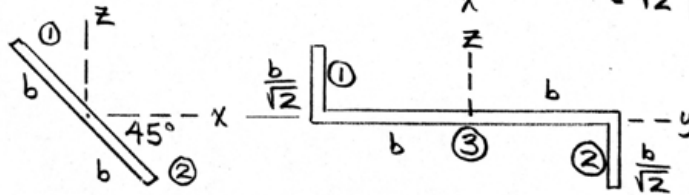


B/63

Part ①: $I_{xy} = \frac{m}{4}(-b)(-\frac{b}{2\sqrt{2}}) = \frac{mb^2}{8\sqrt{2}}$

②: $I_{xy} = \frac{m}{4}(b)(\frac{b}{2\sqrt{2}}) = \frac{mb^2}{8\sqrt{2}}$

③: $I_{xy} = 0$



For Parts ① & ② of combined mass $m/2$, it can be shown via integration that $I_{xz} = -\frac{1}{12}mb^2$.

Part ③: $I_{xz} = 0$

Part ①: $I_{yz} = \frac{m}{4}(-b)(\frac{b}{2\sqrt{2}}) = -\frac{mb^2}{8\sqrt{2}}$

②: $I_{yz} = \frac{m}{4}(b)(-\frac{b}{2\sqrt{2}}) = -\frac{mb^2}{8\sqrt{2}}$

③: $I_{yz} = 0$

Totals:
$$\begin{cases} I_{xy} = \frac{mb^2}{4\sqrt{2}} \\ I_{xz} = -\frac{1}{12}mb^2 \\ I_{yz} = -\frac{mb^2}{4\sqrt{2}} \end{cases}$$