



$$\begin{aligned} I_y &= \bar{I}_y + A d_y^2 \\ &= \left(\frac{\pi}{16} - \frac{4}{9\pi} \right) a^4 + \frac{\pi a^2}{4} \left[\frac{a}{2} + \left(a - \frac{4a}{3\pi} \right) \right]^2 \\ &= \left[\frac{5\pi}{8} - 1 \right] a^4 \end{aligned}$$

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