

B/19

Handle mass is  $\rho L$ ; frame mass is  $\rho(\pi \frac{L}{2})$ .

$$I_{yy} = \frac{1}{12} \rho L \cdot L^2 + \rho L \left( \frac{3L}{8} \right)^2 + \frac{1}{2} \left( \rho \pi \frac{L}{2} \right) \left( \frac{L}{4} \right)^2 + \rho \pi \frac{L}{2} \left( \frac{9}{8} L \right)^2$$
$$= \left[ \frac{43}{192} + \frac{83}{128} \pi \right] \rho L^3$$