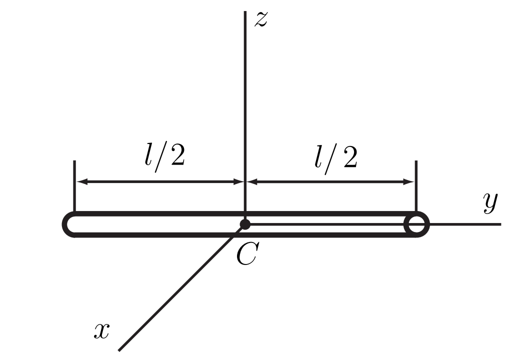
Inertia properties of some homogeneous bodies

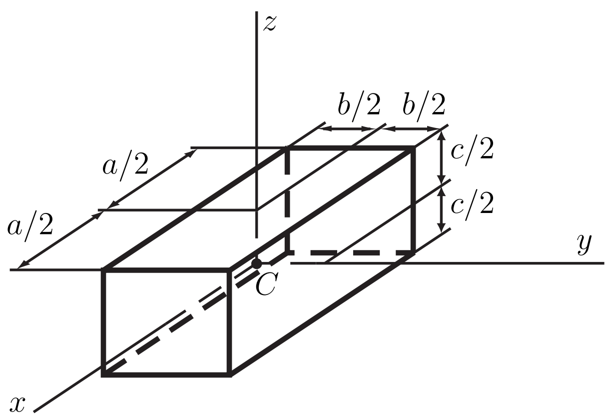
$A =$ cross-sectional area	$\gamma =$ mass density
$m =$ mass	$I_x, I_y, I_z =$ moments of inertia
$C =$ location of the centroid	with respect to x, y, z axis



$$m = \gamma l A$$

$$I_x = I_z = \frac{m}{12} l^2$$

$$I_y = 0$$

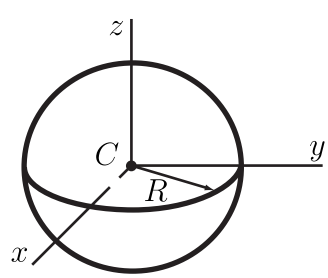


$$m = \gamma abc$$

$$I_x = \frac{1}{12} m(b^2 + c^2)$$

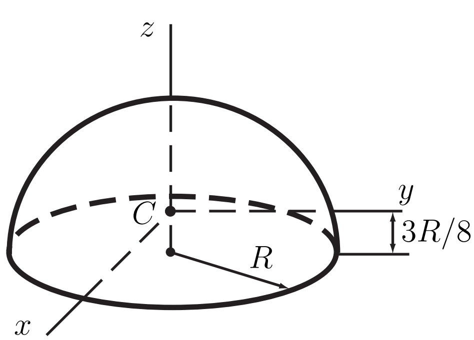
$$I_y = \frac{1}{12} m(a^2 + c^2)$$

$$I_z = \frac{1}{12} m(a^2 + b^2)$$



$$m = \frac{4}{3} \pi \gamma R^2$$

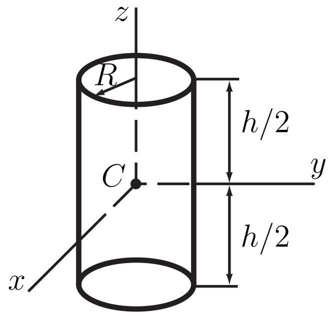
$$I_x = I_y = I_z = \frac{2}{5} m R^2$$



$$m = \frac{2}{3} \pi \gamma R^3$$

$$I_x = I_y = \frac{83}{320} m R^2$$

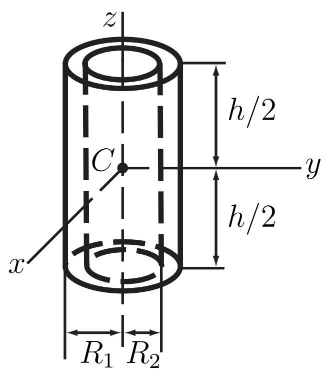
$$I_z = \frac{2}{5} m R^2$$



$$m = \pi \gamma R^2 h$$

$$I_x = I_y = \frac{1}{12} m(3R^2 + h^2)$$

$$I_z = \frac{1}{2} m R^2$$



$$m = \pi \gamma h (R_1^2 - R_2^2)$$

$$I_x = I_y = \frac{1}{12} m(3R_1^2 + 3R_2^2 + h^2)$$

$$I_z = \frac{1}{2} m (R_1^2 + R_2^2)$$