

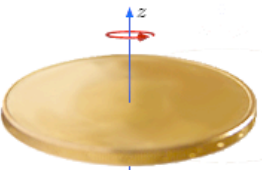

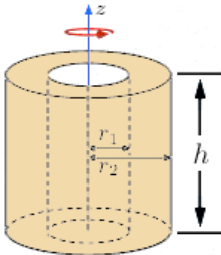

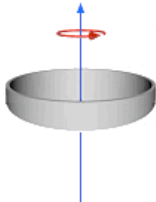



Moments of Inertia of Celestial Bodies

"Imagination is more important than knowledge. For knowledge is limited to all we now know and understand, while imagination embraces the entire world. And all there ever will be to know and understand."
 - Albert Einstein (1879 - 1955)

| | | | | |
|--------------------------------|---|--|-------------------|---|
| solid sphere |  | $I = \frac{2}{5}mr^2$ | \Leftrightarrow |  |
| thin solid disk or cylinder |  | $I_z = \frac{1}{2}mr^2$ $I_x = I_y = \frac{1}{12}m(3r^2 + h^2)$ | \Leftrightarrow |  |
| thick cylinder with open ends |  | $I_z = \frac{1}{2}m(r_1^2 + r_2^2)$ $I_x = I_y = \frac{1}{12}m [3(r_1^2 + r_2^2) + h^2]$ | \Leftrightarrow |  |
| thin cylindrical shell or hoop |  | $I = mr^2$ | \Leftrightarrow |  |