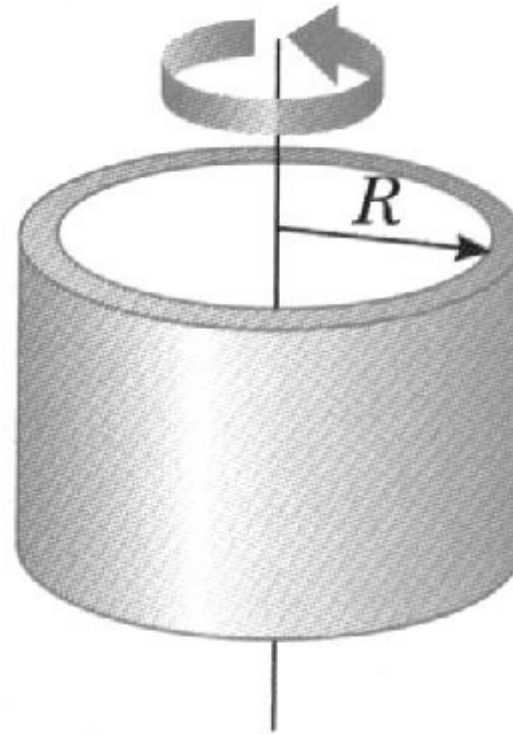


## Moment of Inertia of a Cylinder

Hoop or  
cylindrical shell  
 $I_c = MR^2$

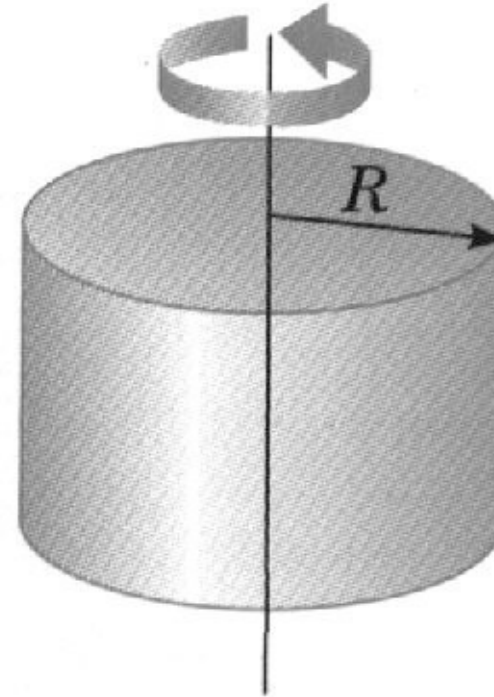


Average radius squared is  $R^2$

## Moment of Inertia of a Solid Cylinder

Solid cylinder  
or disk

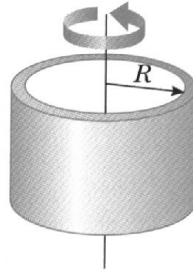
$$I_c = \frac{1}{2} MR^2$$



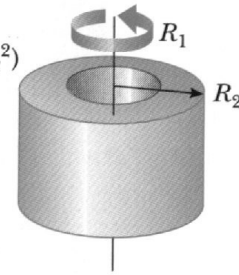
Average radius squared is  $\langle r^2 \rangle < R^2$

# Table from Book

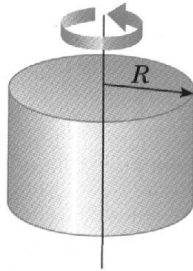
Hoop or cylindrical shell  
 $I_c = MR^2$



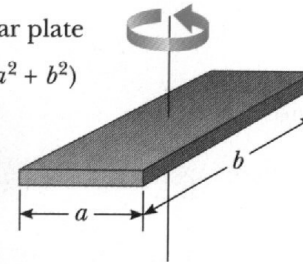
Hollow cylinder  
 $I_c = \frac{1}{2} M(R_1^2 + R_2^2)$



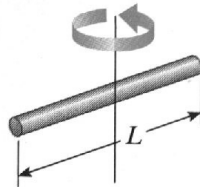
Solid cylinder or disk  
 $I_c = \frac{1}{2} MR^2$



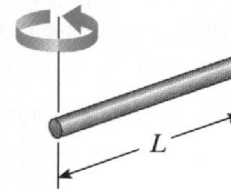
Rectangular plate  
 $I_c = \frac{1}{12} M(a^2 + b^2)$



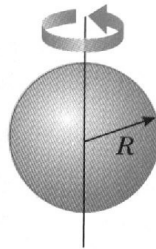
Long thin rod  
 $I_c = \frac{1}{12} ML^2$



Long thin rod  
 $I_c = \frac{1}{3} ML^2$



Solid sphere  
 $I_c = \frac{2}{5} MR^2$



Thin spherical shell  
 $I_c = \frac{2}{3} MR^2$

