

37.2: Radius of Gyration

A quantity closely related to the moment of inertia is the radius of gyration k . Whatever the shape of a body, if all its mass were to be located at the radius of gyration k , then the moment of inertia would be unchanged. The radius of gyration is given by

$$k = \sqrt{\frac{I}{m}} \quad (37.2.1)$$

where I is the moment of inertia and m is the mass of the body. As with moment of inertia, the radius of gyration depends upon the axis about which the body is rotated.

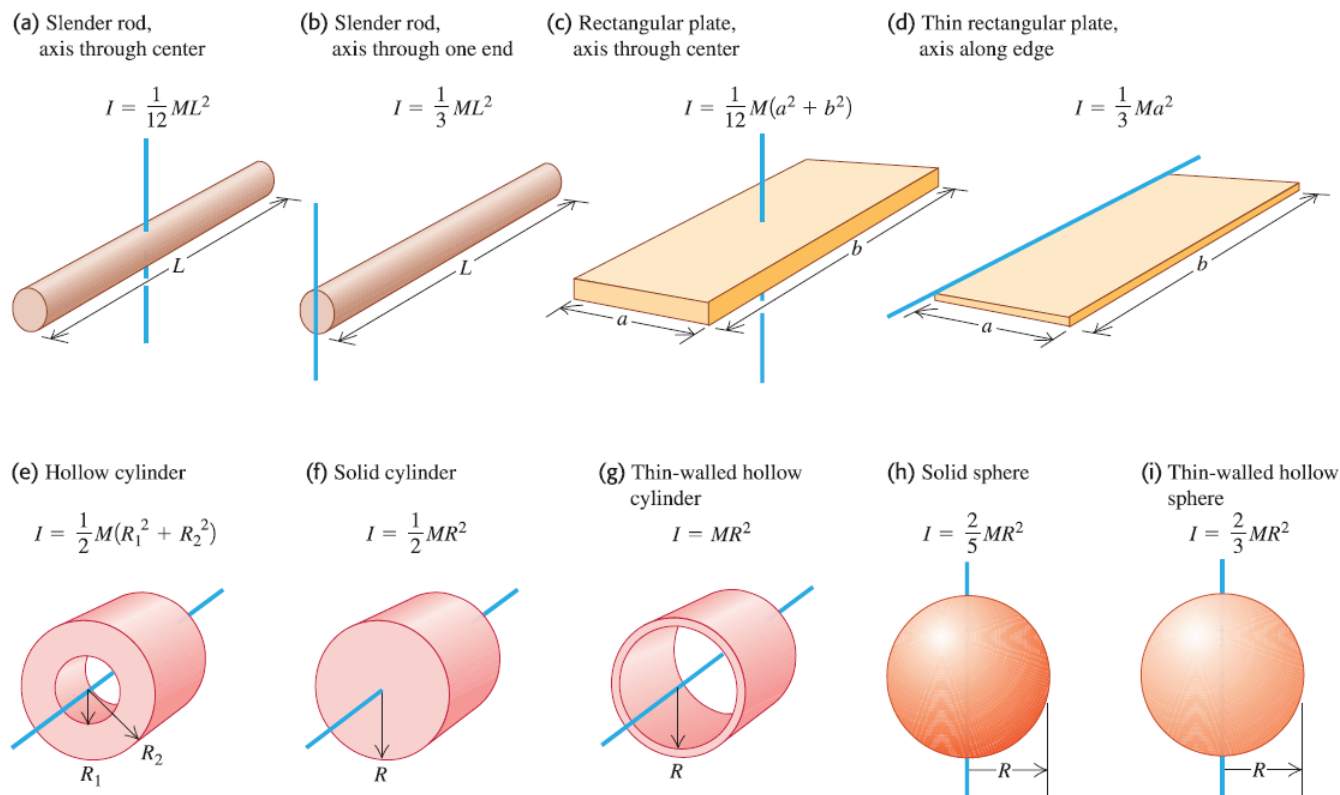


Figure 37.2.1: Table of moments of inertia of uniform bodies. (Credit: University of Pennsylvania.)

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