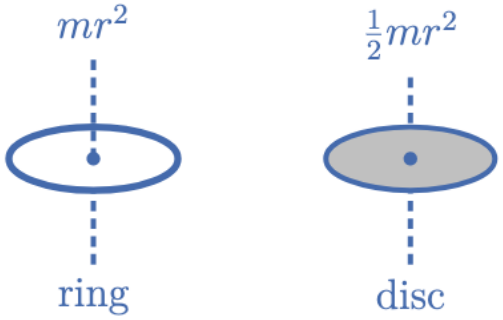
# Dynamics of Rigid body Definitions

Moment of inertia: Moment of inertia is a quantity expressing a body's tendency to resist angular acceleration, which is the sum of the products of the mass of each particle in the body with the square of its distance from the axis of rotation.

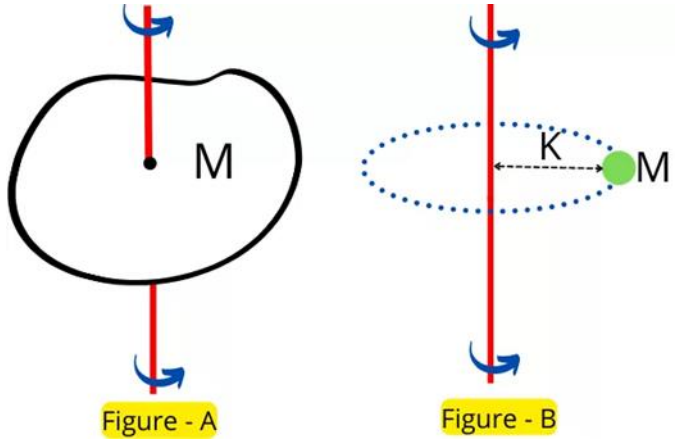
$$I = \Sigma m_i r_i^2$$




*Radius of gyration:* *Radius of gyration* is defined as the radial distance to a point which would have a moment of inertia the same as the body's actual distribution of mass, if the total mass of the body were concentrated there.

Created by:
Nazrana Nahreen
CSE,1bf

$I=MK^2$

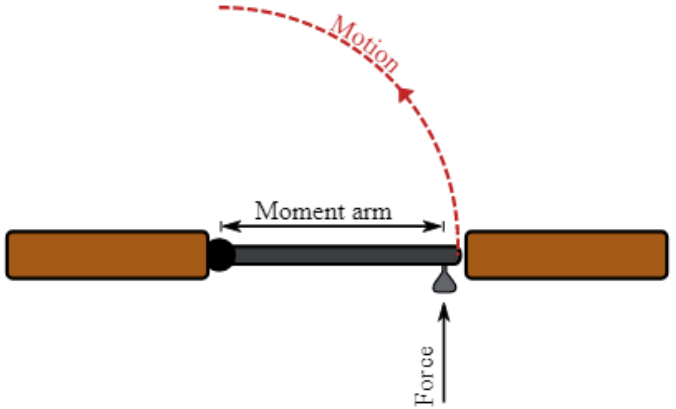



Angular Momentum: The quantity of rotation of a body, which is the product of its moment of inertia and its angular velocity.

$$L = I\omega$$

Torque: Torque is the measure of the force that can cause an object to rotate about an axis

$$\tau = rF\sin\theta$$




Created by:
Nazrana Nahreen
CSE,1bf