

→ Angular Momentum

$$\vec{L} = \vec{r} \times \vec{p} \quad , \quad L = r p \sin \theta$$

$$L = m v r \quad , \quad L = I \omega$$

→ Conservation of angular momentum

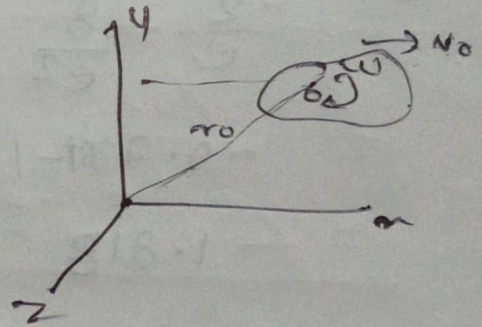
$$L_i = L_f$$

$$\Rightarrow I_1 \omega_1 = I_2 \omega_2$$

→ Angular momentum of a rigid body

$$\vec{L} = \vec{L}_{\text{translation}} + \vec{L}_{\text{rotation}}$$

$$\vec{L} = \vec{L}_{\text{cm}} + m(\vec{r}_0 \times \vec{v}_0)$$



→ Kinetic Energy of a body in combined rotation & translation

$$K = \frac{1}{2} m v_{\text{cm}}^2 + \frac{1}{2} I_{\text{cm}} \omega^2$$

