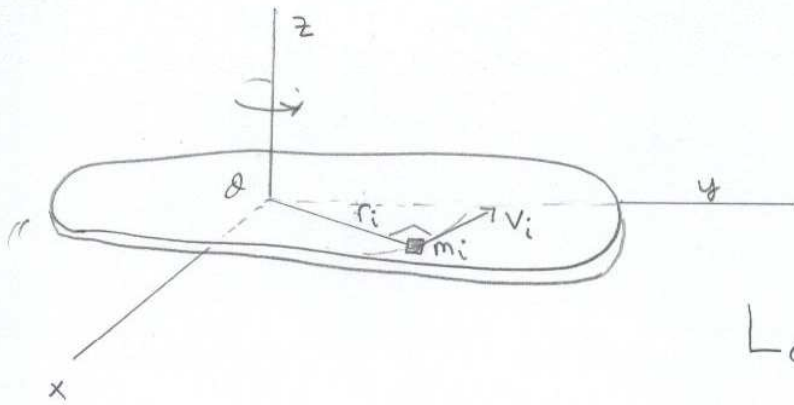


ANGULAR Momentum of A Rigid Body

10-7



$$L_a = ?$$

$$L_{a_i} = p_i r_{\perp i} = p_i r_i$$

$$L_{a_i} = m_i v_i r_i, \text{ but } v = r\omega$$

$$\text{so } L_{a_i} = m_i r_i^2 \omega$$

$$L_a = \sum L_{a_i} = \underbrace{\left(\sum m_i r_i^2 \right)}_{I_a} \omega \Rightarrow \therefore L_a = I_a \omega$$

$$\therefore L = I\omega$$

$p = mv$

RIGID/CONTINUOUS BODY

