Parallel-Axis Theorem

- Consider a rigid body consisting of 2 balls of mass \( m \) connected by a massless rod of length \( L \). Compute \( I \).

\[ A) : I_{cm} = m \left( \frac{L}{2} \right)^2 + m \left( \frac{L}{2} \right)^2 = \frac{1}{2} mL^2 \]

\[ B) : I = I_{cm} + Mh^2 = \frac{1}{2} mL^2 + (m + m) \left( \frac{L}{2} \right)^2 = mL^2 \]

or \[ I = m(0)^2 + m(L)^2 = mL^2 \]