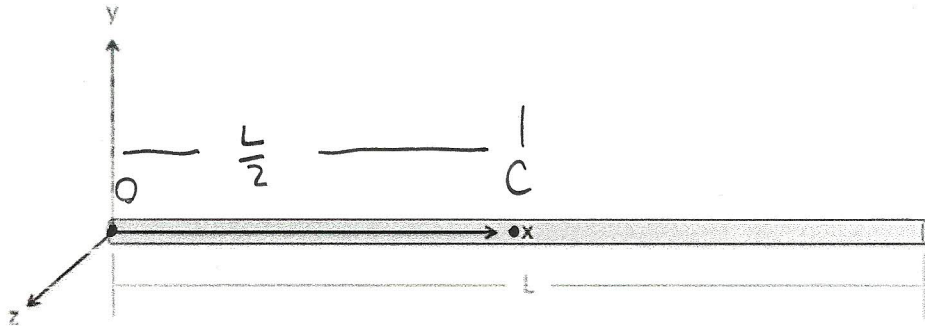


Use the parallel axis theorem to find the mass moment of inertia of this slender rod with mass  $m$  and length  $L$  about the  $z$  axis at its end point.



$$I_{zz_0} = I_{zzc} + mr^2$$

$$I_{zz_0} = \frac{1}{12} mL^2 + m \left( \frac{L}{2} \right)^2$$

$$I_{zz_0} = \frac{1}{12} mL^2 + \frac{1}{4} mL^2$$

$$\boxed{I_{zz_0} = \frac{1}{3} mL^2}$$