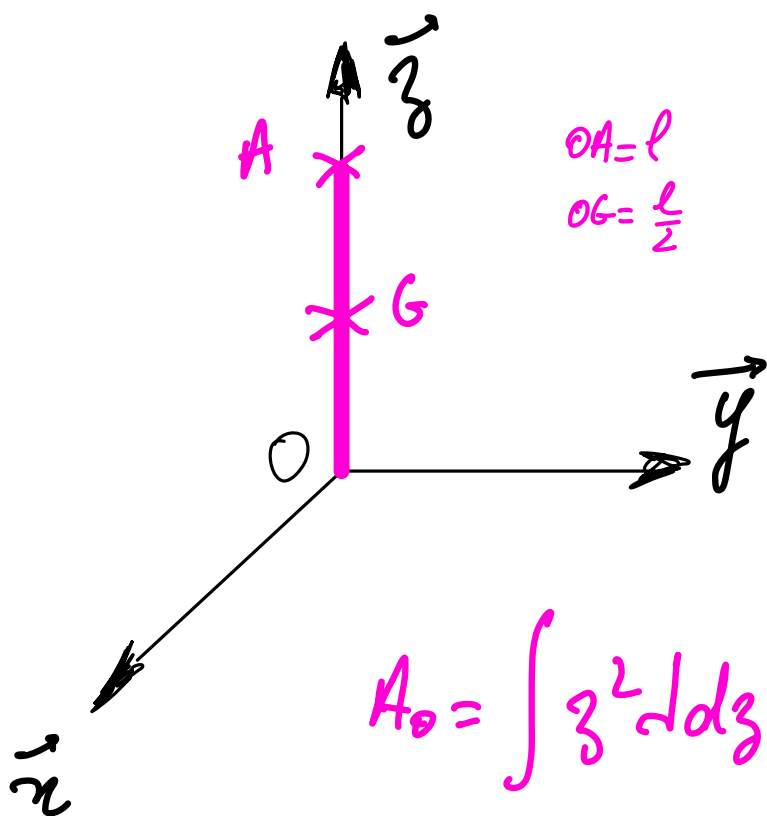




$$J(O, \text{barre}) = \begin{bmatrix} A_0 & 0 & 0 \\ 0 & A_0 & 0 \\ 0 & 0 & 0 \end{bmatrix}_R$$

$$x=y=0 \Rightarrow A_0 = B_0 = \int z^2 dm$$

$$dm = d\ell = dz$$

$$d = \frac{m}{l}$$

$$A_0 = \int z^2 d\ell = d \int_0^l z^2 dz = d \left[\frac{z^3}{3} \right]_0^l$$

$$A_0 = \frac{m}{l} \frac{l^3}{3} = \frac{ml^2}{3} ; A_G = \frac{ml^2}{12}$$

$$A_G = d \left[\frac{z^3}{3} \right]_{-l/2}^{+l/2} = \frac{m}{l} \frac{l^3}{12} = \frac{ml^2}{12}$$

$$\vec{OG} \begin{vmatrix} 0 \\ 0 \\ l/2 \end{vmatrix} \quad J(O, G(m)) = \begin{bmatrix} \frac{ml^2}{4} & 0 & 0 \\ 0 & \frac{ml^2}{4} & 0 \\ 0 & 0 & 0 \end{bmatrix}_R$$

$$A_G = A_0 - \frac{ml^2}{4} = \frac{ml^2}{3} - \frac{ml^2}{4} = \frac{ml^2}{12}$$

$$J(O, \text{barre}) = J(G, \text{barre}) - J(O, G(m))$$