$$J_{A2n} := 2 \cdot \int_0^{H+y_G} y^2 \cdot \left(\sqrt{R^2 - (y - y_G)^2} - r \right) dy = \left(4.81 \cdot 10^6\right)\ mm^4$$

$$J_{A1pn} := 2 \cdot \int_0^{R-y_G} y^2 \cdot \left(\sqrt{R^2 - (y + y_G)^2} - r \right) dy = \left(3.96 \cdot 10^6\right)\ mm^4$$

$$J_{rn} := \frac{d_l \cdot (h - y_G)^3}{12} + (h - y_G) \cdot d_l \cdot \left(\frac{h - y_G}{2} \right)^2 = 268.783\ mm^4$$

$$J_{Tn} := \frac{d_l \cdot (r \cdot \tan(30\ deg))^3}{36} + \frac{d_l \cdot r \cdot \tan(30\ deg)}{2} \cdot \left(\frac{r \cdot \tan(30\ deg)}{3} + (h - y_G) \right)^2 = 409.452\ mm^4$$

$$J_{ACn} := J_{A2n} + J_{A1pn} - J_{rn} - J_{Tn} = \left(8.769 \cdot 10^6\right)\ mm^4$$