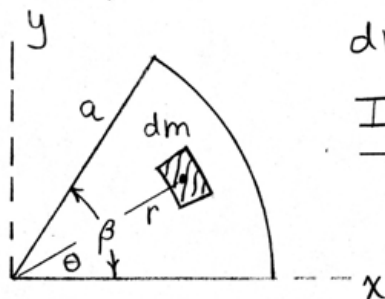


B/54



$$dm = \rho t r dr d\theta$$

$$\underline{I_{xz} = I_{yz} = 0}$$

$$\begin{aligned}
 I_{xy} &= \int xy \, dm = \int_0^\beta \int_0^a (r \cos \theta)(r \sin \theta) \rho t r dr d\theta \\
 &= \rho t \int_0^\beta \int_0^a r^3 \cos \theta \sin \theta dr d\theta \\
 &= \rho t \int_0^\beta \frac{a^4}{4} \cos \theta \sin \theta d\theta \\
 &= \frac{\rho t a^4}{4} \frac{\sin^2 \beta}{2} = \frac{\rho t a^4 \sin^2 \beta}{8} \left(\frac{m}{\rho t \beta a^2 / 2} \right) \\
 &= \underline{\underline{\frac{m a^2 \sin^2 \beta}{4 \beta}}}
 \end{aligned}$$