

FIND I about z axis

$$\rho = 5000 \text{ kg/m}^3$$

USE INFINITESIMAL DISK ELEMENT

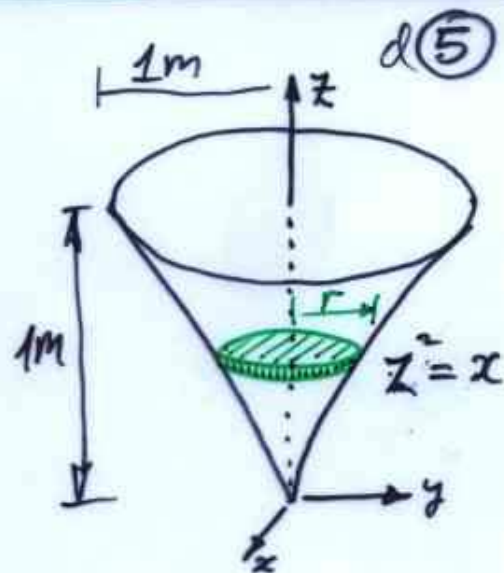
$$\text{mass} = \rho dV = \rho(\pi x^2 dz)$$

$$I_G \text{ of Disk} = \frac{1}{2} m R^2$$

(from last e.g.)

$$\Rightarrow dI_z = \frac{1}{2} dm x^2$$
$$= \frac{1}{2} [\rho \pi x^2 dz] x^2$$

$$x = z^2; \quad I_z = \int_0^1 dI_z$$
$$= \frac{\rho \pi}{2} \int_0^1 z^8 dz$$
$$= 873 \text{ kg m}^2$$



ought to
use "r" not
x or y