

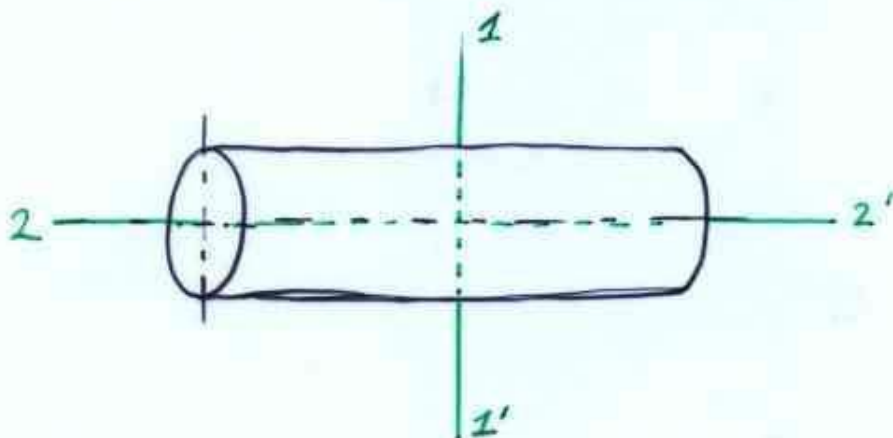
Mass Moment of INERTIA:

d(3)

$$I = \int r^2 dm$$

N.B. relative to a given axis

I represents a body's RESISTANCE TO ROTATION ABOUT A PARTICULAR AXIS.



$I_{11'} > I_{22'}$... DIFFERENT AXIS \Rightarrow DIFFERENT I in general.

2-D PLANE MOTION

\Rightarrow all axes PARALLEL & LOOK LIKE POINTS.

2-D ONE AXIS SPECIAL ... THROUGH CENTER OF MASS

DENOTE $I_G = \int r^2 dm$

(in 3D LOTS of axes go through G , BUT we won't LOOK at this in the current course)

for I_G , axis is PERPENDICULAR TO PLANE OF MOTION. (2D problems)