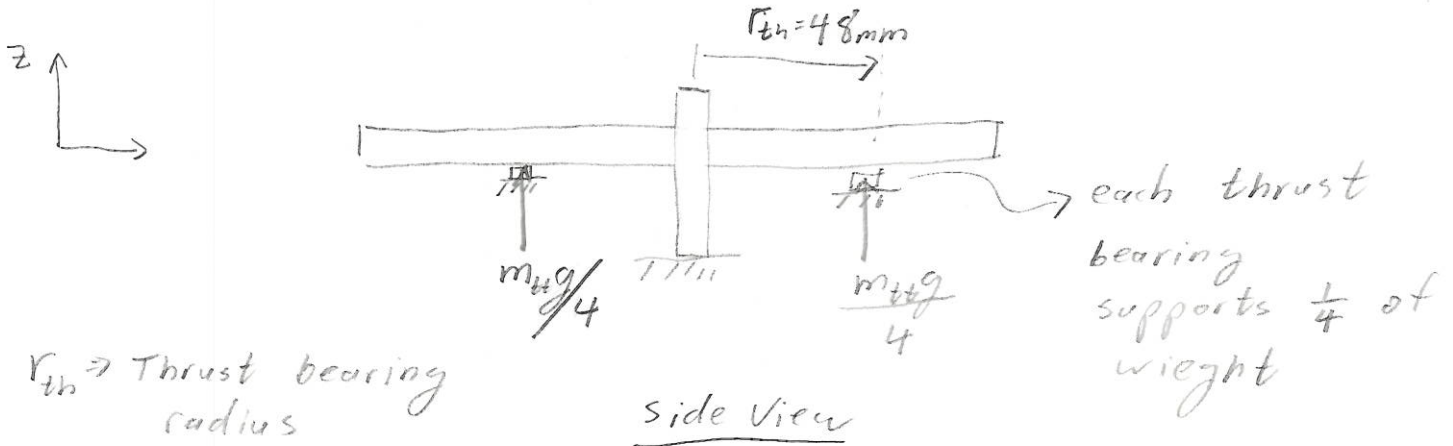


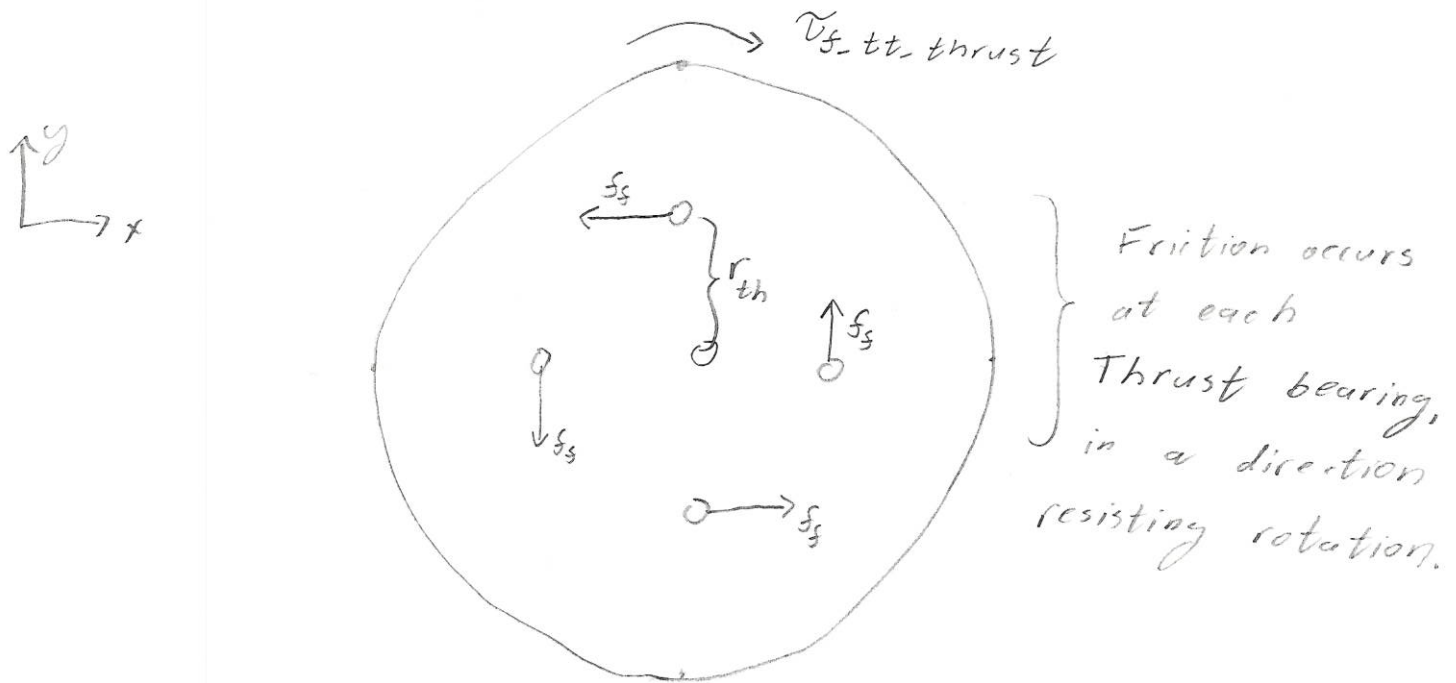
Friction in Turntable Thrust Bearings, $\tau_{f_tt_thrust}$, (Vertical Supports)

Draw FBD side view and top view of turntable. For analysis of this components apply weight of turntable but you can neglect forces from friction drive.



$r_{th} \Rightarrow$ Thrust bearing radius

$m_{tt} \Rightarrow$ mass of turntable



Friction force at each bearing: $f_s = \mu N = \mu m_{tt} g / 4$

The torque friction: $\tau_{s-tt-thrust} = 4 \cdot f_s \cdot r_{th} = 4 \mu m_{tt} g r_{th} / 4$

$\mu \Rightarrow$ acrylic on acrylic, $\mu = 0.8$

$\tau_{s-tt-thrust} = 0.8 \cdot 0.35 \text{ kg} \cdot 9.8 \frac{\text{m}}{\text{s}^2} \cdot 0.048 \text{ m} = \underline{0.132 \text{ N}\cdot\text{m}}$