# Worksheet 10: Rotational Inertia

Name: _____

Partner: _____

**As usual, turn your Excel document into the Google drive. Plots should use the class template, AND have proper axis labels, rational sig-figs on the axes, labels, a good trendline, etc.**

**Since there is also an abstract due next week, this worksheet has no discussion questions.**

| Static Measurements | | |
|---|---|---|
| **Quantity** | **Units** | **Result** |
| Serial number | - | |
| $m_{clip}$ | g | ± |
| $m_{block}$ | kg | ± |
| Sample block dimension $x_1$ | cm | ± |
| Sample block dimension $x_2$ | cm | ± |
| Sample block dimension $x_3$ | cm | ± |
| $w$ | cm | ± |
| $L$ | cm | ± |
| $D_{rim}$ | cm | ± |
| $H$ | cm | ± |
| $d$ | cm | ± |
| $D$ | cm | ± |

| Static Calculations | | |
|---|---|---|
| **Quantity** | **Units** | **Result** |
| $R$ | cm | |
| $V_{brick}$ | cm$^3$ | |
| $\rho_{steel}$ | kg/cm$^3$ | |
| $\rho_{steel}$ | kg/m$^3$ | |

| Cylinder Calculations | | | |
|---|---|---|---|
| | $V$ (cm$^3$) | $m$ (kg) | $I$ (kg·cm$^2$) |
| Large | | | |
| Small A | | | |
| Small B | | | |
| Total | | | |

| Results | |
|---|---|
| $I_{static}$ | ( ± ) kg·cm$^2$ |
| Slope, $\tau$ vs $\alpha$ | ( ± ) kg·cm$^2$ |
| $I_{dynamic}$ | ( ± ) kg·cm$^2$ |