Raw Data Sheet

Student Name: _____

Team members:

1.- _____ 2.- _____

3.- _____ 4.- _____

Instructor: _____

Following the guidance from your instructor, perform the required tasks and record your observations.

Table 1.- Disk

Disk Mass (kg)	Hub Diameter (units)	Disk Diameter (units)
$M = 1.73$ kg	$D_{\text{hub}} =$	$D =$

Table 2.- Stripe Frequency

Hanging Mass (units)	Trial 1	Trial 2	Trial 3	Average
$m_1 =$				
$m_2 =$				
$m_3 =$				
$m_4 =$				
$m_5 =$				
$m_6 =$				
$m_7 =$				
$m_8 =$				
$m_9 =$				
$m_{10} =$				

Introduction

With your own words, state the purpose of the lab.

Analysis

Torque

For one of the trials, make a diagram to explain where the force producing the torque is being applied and also the direction of the torque. Include the relevant measurements and the appropriate units.

Calculate the magnitude of the torque for each mass.

Angular acceleration

For each mass, calculate the average rotation rate of the disk, in radians per second.

Use the average rotation rate for each hanging mass to determine the corresponding angular acceleration of the disk.

Moment of Inertia

Make a plot of torque v.s. angular acceleration and find the best fit line and its slope; include appropriate units.

If your plot is in agreement with equation (9.2) of the lab notes, then what is the value of the moment of inertia. Compare this value with that of an homogeneous disk of the same mass and diameter.

Conclusions

Write a brief reflection that summarizes the lab exercise, in particular, your results –be specific.