

PHY122

Lab # 8 NAME _____
Rotational Equilibrium

Lab Partners:

Purpose: The purpose of this lab is to study torque and rotational equilibrium.

Apparatus

metre stick
support stand
4 knife-edge clamps
3 weight hangers
assorted sizes of slotted weights
1 laboratory scale

Procedure Part A Rotational Equilibrium Lab

1) Find the balance point of the metrestick and place one of the knife-edge clamps here. This is the location of the center of gravity of the metrestick. Record this location. Leave this clamp here until part C.

The balance point is at _____. (This is the center of gravity of the metrestick.)

2) Place another knife-edge clamp on the metrestick at the 35.0 cm mark and put one of the hangers on it.

3) Place a second knife-edge clamp on the metrestick at the 95.0 cm mark and put one of the hangers on it.

4) Add whatever additional mass is needed to the hanger on the 35.0 cm mark to balance out the metrestick.

5) Remove and measure the total mass being applied at the two locations. (Remember to measure the mass of the clamps as well as the hangers and masses on them.) Record the values below.

6) Calculate and record the lengths of the moment arms and torques produced by each of the forces being applied to the metrestick at the hangers.