**Balance Beam** Name(s):\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Presentation/Format: \_\_\_ / 5

FBDs: \_\_\_ / 5  
Calculations: \_\_\_ / 5

Purpose:

**Part 1**

Procedure:

1. Set up a meter stick on a fulcrum.
2. Determine the center of mass and record it.
3. Hang 3 ***different masses*** from the meter stick such that they achieve equilibrium.
4. Calculate τc, τcc and Στ.

Data:

* Include a free body diagram showing all of the forces on the meter stick.

Calculations:

Discussion:

* State the conditions required for a body in equilibrium. (note: you can do this simply by using equations!)

**Part 2**

Procedure:

1. Set up a meter stick on a fulcrum.
2. Hang a single mass from the end of the meter stick.
3. Move the meter stick until it reaches equilibrium.
4. Determine the mass of the meter stick.
5. Weigh the meter stick and calculate the % difference between the measured and calculated masses.

Data:

* Include a free body diagram showing all of the forces on the meter stick.

Calculations:

Discussion:

* Explain how it is possible for the meter stick to be balanced when there is only one mass hanging from it.