

Circle Recitation Time: W1:30 W2:30 H8:30 H9:30 H10:30 H12:30 H1:30 H2:30

Physics 151 Worksheet #8b: Torque & Center of Mass

Name: _____

Partner(s): _____

Directions : Complete the following questions based on the computer simulations. Please show all of your work and explain all of your reasoning. Place a box around any numerical answers.

Simulation #1: Balance a Mobile

Calculate the mass of each of the following objects:

Green Block Mass m_g :

Red Block Mass m_r :

Orange Block Mass m_o :

Yellow Block Mass m_y :

Purple Block Mass m_p :

Simulation #2: The Stacking of Bricks

- a. What is the stability condition for an object overhanging a table?
- b. How should each brick be positioned relative to the brick underneath it? Be explicit and refer to the center of gravity. Hint: Start at the top and work down.
- c. Can the top brick have its entire length beyond the edge of the table?
- d. Challenge: Come up with a mathematical description for the overhang of each individual brick and the total overhang.

Simulation #3: Center of Mass Determine the location of the purple sphere.

Answer =	
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