

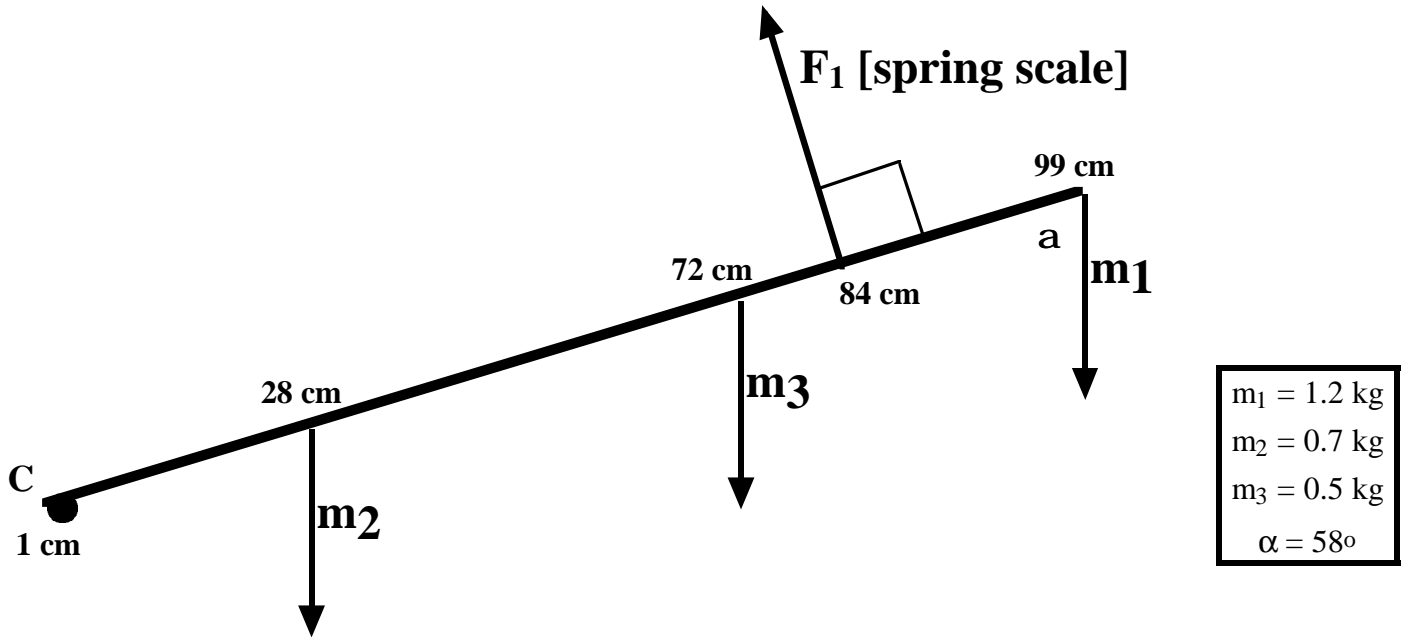
NAME \_\_\_\_\_

PERIOD \_\_\_\_\_

**PHYSICS HOMEWORK QUIZ #8D**

**TORQUE AND EQUILIBRIUM**

Each of the following questions refers to the diagram and data below. This system, which consists of a meter stick with three weights hanging from it and a single spring scale, is at equilibrium and the center of rotation is located where a nail passes through the meter stick as shown.



1. What will be the **direction** and **magnitude** of the torque exerted by  $m_1$  about the designated center ? [6 pts]
2. What will be the total **clockwise** torque acting on this system ? [3 pts]
3. What will be the total **counter-clockwise** torque acting on this system ? [3 pts]
4. What will be the magnitude of the force  $F_1$  required to generate equilibrium? [3 pts]