Name: _____ Date: _____ Course: _____ Professor: _____

M24a Prelab: Torque Vectors

Read the lab instructions and the appropriate sections of chapters 10, 11 and 12 from your textbook before answering the questions

1. Give a definition of torque as a vector and provide the equation to calculate the magnitude of the torque.

2. If a torque is generated by an acting force ($\vec{F}$) applied at a radius ($\vec{r}$) from the pivot point, describe how to determine the direction of this torque. What would be the angle between the directions of the force and the torque?

3. What should be the net torque on an object for it to be in equilibrium?

4. Give a definition of the lever arm. In your experiment, will you directly measure or calculate it?

5. Describe how you will determine the following values in the lab:

a) The torque magnitude:

b) The torque direction:

c) The x and y components of the torque:

6. Write down the equation to calculate the percent difference between two experimental values X_1 and X_2.