## Torques and Static Equilibrium

As you work through the steps in the lab procedure, record your experimental values and the results on this worksheet. Use the exact values you record for your data to make later calculations.

## Examine the Apparatus

Record the $x$-coordinate $x_{\mathrm{cg}}$ of the center of gravity for the meterstick.

What value would you expect for $x_{\text {cg }}$ if the meterstick has a uniform distribution of mass along its length?

Is your result close to that value?

Record the mass $m_{\text {hook }}$.

## Static Equilibrium for Different Torques - Data

Complete the table.

Table 1

| $m_{2}$ <br> $(\mathrm{~g})$ | $x$ <br> $(\mathrm{~cm})$ | $m_{2}+m_{\text {hook }}^{(\mathrm{g})}$ |
| :---: | :---: | :---: |
| 50 |  |  |
| 60 |  |  |
| 70 |  |  |
| 80 |  |  |
| 90 |  |  |
| 100 |  |  |
| 110 |  |  |

## Graphical Analysis

Enter the numerical value of the vertical intercept predicted by your Eq. (4) in the Procedure.

Record the slope of the straight line in your Excel graph.

Record your result for $M$. (Use the $x$-coordinate of the center of gravity you recorded.)

