

**Uniform Circular Motion Worksheet**

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

**Procedure A:** Measuring the period of rotation

Use the balance to find the mass  $M_R$  of the rotating object.

$$M_R = \underline{\hspace{2cm}}$$

Complete the table below.

**Data Table 1**

<b>Trial</b>	<b><math>r</math> (m)</b>	<b><math>m_h</math> (kg)</b>	<b><math>m_h g</math> (N)</b>	<b><math>t</math> (s)</b>
<b>1</b>				
<b>2</b>				
<b>3</b>				
<b>4</b>				
<b>5</b>				

<b>CHECKPOINT 1:</b> Data Table 1 values
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Complete the data table below using values from Data Table 1.

**Data Table 2**

Trial	$T$ (s)	$a_c$ (m/s <sup>2</sup> )	$F_c$ (N)	% diff
1				
2				
3				
4				
5				

**CHECKPOINT 2:** Data Table 2 values

**Procedure B:** Plot of  $m_h g$  versus  $a_c$

What is the experimental value of  $M_R$  from the slope of the graph of  $m_h g$  versus  $a_c$ ?

$M_R =$  \_\_\_\_\_

What is the percent difference in the values of the mass determined from the slope and from weighing?

percent difference = \_\_\_\_\_%

Are the two values of  $M_R$  in close agreement? (A percent difference of  $\pm 10\%$  is acceptable in this situation.)

**CHECKPOINT 3:** Graph and calculations