

## Force and Acceleration in Circular Motion

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.

### Data

Complete the table.

**Table 1**

	$M = 150 \text{ g}$ $L = 50 \text{ cm}$	$M = 200 \text{ g}$ $L = 50 \text{ cm}$	$M = 250 \text{ g}$ $L = 50 \text{ cm}$	$M = 200 \text{ g}$ $L = 40 \text{ cm}$	$M = 210 \text{ g}$ $L = 30 \text{ cm}$
$t_{20(1)} \text{ (s)}$					
$t_{20(2)} \text{ (s)}$					
$f_1 \text{ (rev/s)}$					
$f_2 \text{ (rev/s)}$					
$f \text{ (rev/s)}$					
$M/L \text{ (g/cm)}$					
$M/L \text{ (kg/m)}$					

Record the slope of the line that is the best fit to your data.

Use the balance to measure the mass of the ball.

## Calculations

Calculate  $g$  from your data.

If the actual value of  $g$  is taken to be  $9.80 \text{ m/s}^2$ , what is the percentage difference between your experimental result and the actual value of  $g$ ?