Centripetal Force Lab

Procedure

Briefly, but completely, describe the procedure for this lab – and include a labeled sketch.

Data **Mass _____** **Radius _____**

F	*v*

Graphs

Using appropriate scales, labels and units, graph your data. If it's linear, find the best fits line. If it's not, figure out how to make a second graph linear, and add another column for your linear data, or make a new table for the linear graph. Then draw a best fits line.

Questions

1) Show the calculation for the distance you entered for the Photogate in the LabQuest.

2) Draw a free body diagram for the mass as it spins. What is providing the centripetal force in this lab?

3) After graphing your data, find the equation of your best fits line. Show your work.

4) Using the actual values of the mass and radius, find the accepted value of the mass/radius ratio.

5) Use the slope of your graph to find an experimental value for the mass/radius ratio used in this lab. Find the percent error for your experimental graphical value.

Error Analysis

Thoroughly explain what the main sources of error are for this lab, and how you would correct them.