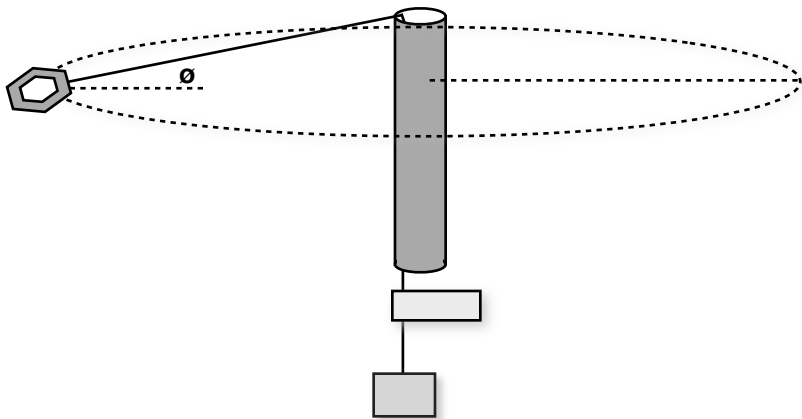
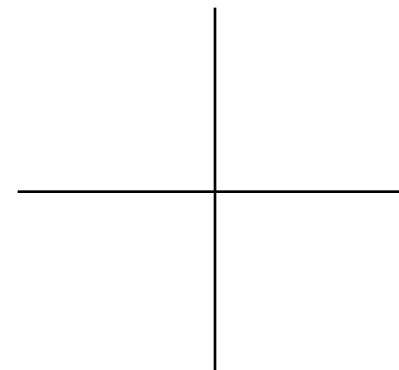
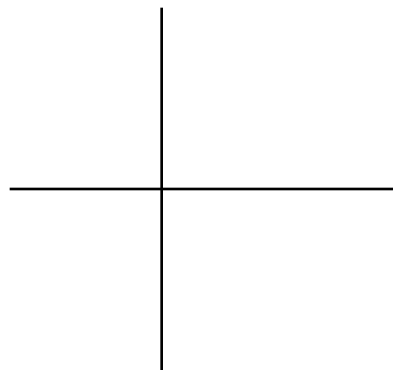


round and round we go. . .

Diagram



FreeBody Diagrams



Sum of the Forces

$$\Sigma F_x =$$

$$\Sigma F_y =$$

$$\Sigma F_x =$$

$$\Sigma F_y =$$

Keep clear of people.

Swing the mass around in a circle at a constant velocity making sure that the tape on the string does not move up or down. Try to keep the nut as horizontal as possible. Make sure the string can move freely.

1. Use enough washers to get them to go around in a smooth circle.
2. Record the total time for 10 revolutions. Do this 3 times with the same weight.
3. Add more weight (washers) and repeat the procedure.

Physics Lab
Period _____

Name _____
Date _____

Data Acquisition

# washers	washers m_2 (kg)	Time for 10 revs (s)	Time for 10 revs (s)	Time for 10 revs (s)	Ave. Period T (s)	v (m/s)	v^2 (m/s)	a_c (m/s ²)	F_c (N)
~ 8									
~ 12									
~ 16									

Data Analysis

Solve the equations for mass of the steel nut.
What was your percent error?

Sum of the Forces

$$\Sigma F_x =$$

$$\Sigma F_x =$$

$$\Sigma F_y =$$

$$\Sigma F_y =$$

If the string breaks above 100 N what is the maximum speed that the steel nut can turn?

Conclusion
