- Purpose: To determine the forces acting on a small, battery powered, airplane that is suspended by the ceiling, and to calculate the centripetal force through two different methods.

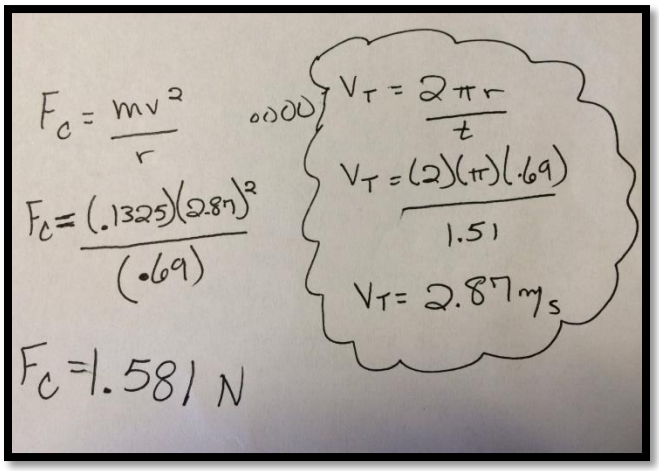
- Equipment: A small battery powered airplane, a video camera to record data, and a meter stick.

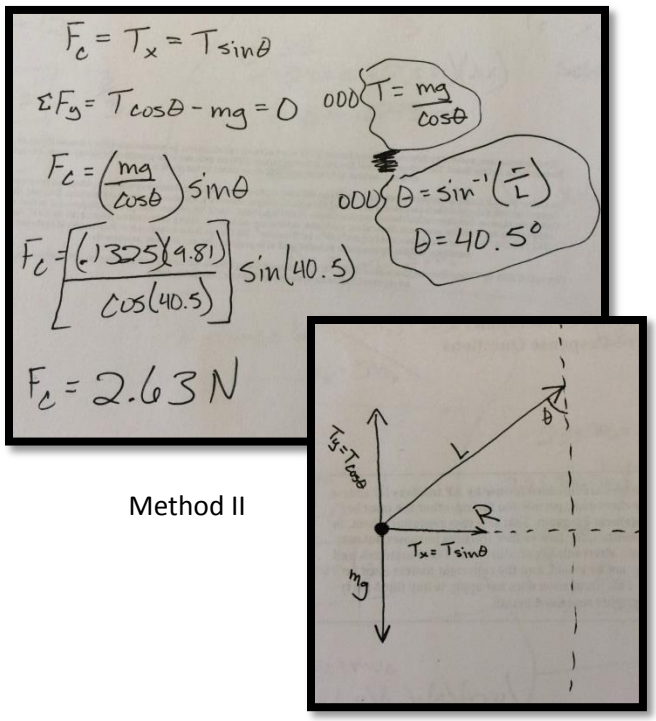
- Procedure: 1) Determine the mass of the plane and the length of the supporting string.
  2) Turn on the switch and give the plane a gentle push to get it started in a circular path. Allow the plane to stabilize for a couple of minutes.
  3) Determine the measurement of the flight radius by looking straight up from below the path.
  4) Determine the period of the flight by timing the revolutions.
  5) Use the stated methods to solve for the centripetal force.

  Variables in this experiment mostly consists of human error during the taking of the manual measurements.

- Data / Data Analysis:

Method I





Method II

- Conclusion: During this lab, we expanded our knowledge of centripetal force and the factors that affect it. One of the possible sources of error would have been mistakes with measuring the radius and the interval as that data was taken manually. This can account for the ≈ 1.05 N difference in the two methods results.