

Name: _____

Pre-lab 6: Uniform Circular Motion

1. Consider a puck moving at a constant speed on a large air hockey table. A string, attached to the puck and the center of the table, constrains the puck's motion to a circular path. Since circular motion is accelerated motion there must be a net force causing the acceleration of the puck. Draw a complete force diagram for the puck and identify the force(s) causing the acceleration (you may want to draw both a top and a side view).

2. In this experiment we are attempting to find how the acceleration for uniform circular motion depends on speed and path radius. Our experimental setup literally consists of a small "puck" on a string. We will use an electric motor to rotate the puck at a constant linear speed. Rather than directly measuring the speed and acceleration of the puck, we will measure the rotation period T and string tension F_T . Read the lab instructions and then answer these questions:

a) How will you convert T to a linear speed?

b) How will you convert F_T to an acceleration?

c) What else will you need to measure to make these conversions?