Name: _____ Date: _____ Course: _____ Professor: _____

S3c Prelab: Standing Waves on a String

Read Lab instructions and watch the video before Answering Questions

1. Alejandra is playing the violin, which has a string length of 30 cm between fixed points. The string has a linear mass density of $7.2\ x\ 10^{-4}\ kg/m$ and oscillates at a frequency of 440 Hz forming a standing wave of one loop (internodal distance=30 cm).

   A. Calculate the wavelength using the internodal distance.

   B. Calculate the wave speed and the tension in the string. (Hint: Use equations 2 and 5 from your Lab Instructions)

   C. Using the calculated wave speed, calculate the frequency needed to obtain a standing wave of two loops. (Hint: Calculate the wavelength first since it will change and then use equation 2 from your Lab Instructions)