Standing Wave Lab

Materials: meter stick, digital scale, standing wave kit

Instructions:

1. Find the mass of the motor unit and calculate the force gravity. Assume the force gravity of the motor unit is the same as the tension in the string. Tension: \_\_\_\_\_\_\_\_ N
2. Establish a standing wave on the string. Measure the length of the string required to reach the standing wave: \_\_\_\_\_\_\_\_\_ m
3. Again, establish the standing wave and then measure the distance between nodes. Multiply this distance by two to obtain the wavelength: \_\_\_\_\_\_\_\_\_\_ m
4. Find the mass of the string used to create the standing wave: \_\_\_\_\_\_\_\_\_ kg
5. Find the linear density of the string with mu = (mass/length) = \_\_\_\_\_\_\_\_\_ kg/m
6. Calculate the velocity of the wave disturbance using v = sqrt(tenstion/mu) = \_\_\_\_\_\_\_\_ m/s
7. Calculate the frequency of the wave disturbance using v = frequency \* wavelength: \_\_\_\_\_\_ Hz
8. What were some potential sources of errors in your experiment?