**QUESTIONS TO HAND IN – EXPERIMENT 1**

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**LAB INSTRUCTOR\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_LAB DAY/TIME\_\_\_\_\_\_\_\_\_\_ \_ \_\_**

**1.** A standing wave pattern exhibits a wavelength l of 0.10 m at a frequency *f* of 70 hertz. What is the wave speed *v*?

**2.** In this experiment, the frequency *f* of the wave is kept constant by the tuning fork, and the speed *v* is changed by changing the tension *T* on the string. How much of a change in wave speed do you need to go from a 6-loop pattern to a 3-loop pattern?

**3.** The speed *v* of waves on a string is proportional to the square root of the tension *T*. By what factor does the tension have to be increased in order to increase the speed by a factor of 4?

**4.** The other factor affecting the speed of waves on a string is the linear mass density *m*. What would you do to change this factor?

**5.** A standing wave pattern is observed with 5 loops that extend over 0.70 meters. What is the wavelength?