PHYS 201 SFQ on String Vibrations Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Speed of transverse waves on a stretched string is given by,



1. Describe each term in the above equation.

2. Show that the above equation is valid unit wise (ie dimensionally correct).

3. A string has a linear density of 8.5×10–3 kg/m and is under a tension of 280 N. The string is 1.8 m long, is fixed at both ends, and is vibrating in the standing wave pattern shown in the drawing. Determine the (a) speed, (b) wavelength, and (c) frequency of the traveling waves that make up the standing wave.

