FLINN SCIENTIFIC

Name_____

AP Physics 1 Review Questions

Integrating Content, Inquiry and Reasoning

1. Which of the following properties, amplitude, frequency, and wavelength, affect the wave speed of the stretched spring?

2. A longitudinal wave is propagated through a medium. The distance from one maximum compression to the next is x meters and its speed is y m/s. Express the frequency of the waves in terms of x and y.

3. A wave is propagated through a spring. A point on the spring moves perpendicular to the motion of the wave a total of 32 cm during one complete wave cycle. What is the amplitude of the wave?

4. A standing wave is created in a vibrating string in which the length, L, is 1.5 meters long. The string is fixed at each end and displays three antinodes.

   a. Determine the wavelength of the standing wave.

   b. The period of the vibrating string is 0.004 seconds. What is the frequency of the standing wave?

   c. What is the speed of the propagated transverse waves?

   d. At what frequency would the same string need to vibrate in order to establish one antinode?

   e. The motor creating the vibrations in the string can reach a maximum frequency of 300 Hz. Can a standing wave with four antinodes be created with the string as it is using this motor? Explain.

5. Explain how a guitar player can produce so many different notes with only six strings.