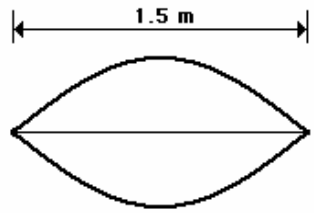
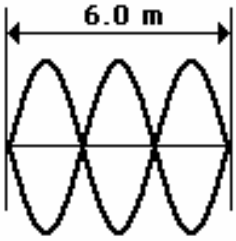
Name _____ Physics

Standing Waves

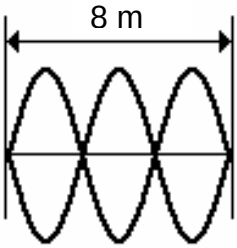
1. The string at the right is 1.5 meters long and is vibrating as the first harmonic. The string vibrates up and down with 33 cycles in 10 seconds. Determine the frequency, period, wavelength and speed for this wave.



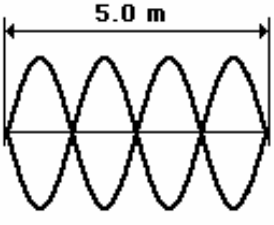
2. The string at the right is 6.0 meters long and is vibrating as the third harmonic. The string vibrates up and down with 45 cycles in 10 seconds. Determine the frequency, period, wavelength and speed for this wave.



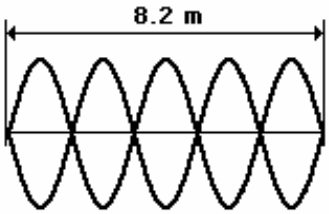
3. The string at the right is 8.0 meters long and is vibrating as the third harmonic. The string vibrates up and down with 62 cycles in 12 seconds. Determine the frequency, period, wavelength and speed for this wave.



4. The string at the right is 5.0 meters long and is vibrating as the fourth harmonic. The string vibrates up and down with 48 cycles in 20 seconds. Determine the frequency, period, wavelength and speed for this wave.



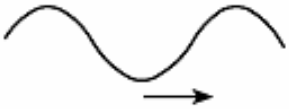
5. The string at the right is 8.2 meters long and is vibrating as the fifth harmonic. The string vibrates up and down with 21 cycles in 5 seconds. Determine the frequency, period, wavelength and speed for this wave

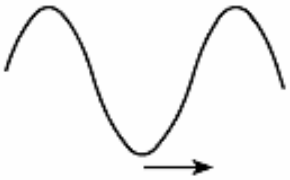


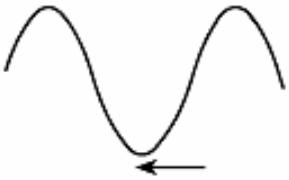
6. The diagram below represents a wave moving toward the right side of this page.

Which wave shown below could produce a standing wave with the original wave?

A) 

C) 

B) 

D) 

7. The superposition of two waves traveling in the same medium produces a standing wave pattern if the two waves have

A) the same frequency, the same amplitude, and travel in opposite directions
B) the same frequency, the same amplitude, and travel in the same direction
C) the same frequency, different amplitudes, and travel in the same direction
D) the same frequency, different amplitudes, and travel in opposite directions