

Standing Waves – Example Problems

Name: _____ Date: _____

1. A guitar string is 50 cm long and is vibrating at a frequency of 550 Hz. The string is vibrating at the 4th harmonic. Calculate the speed of the wave.

2. An open air column (at both ends) is vibrating at the third resonance length. The column is 25 cm long and the air temperature is 15°C. Calculate the frequency of the sound.

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3. A metal rod, fixed at one end, is vibrating at the 2nd harmonic and has a measured wavelength of 20 cm. a) Calculate the length of the rod b) Calculate the speed of the wave if the rod is vibrating 320 times every 4 seconds.