

Rotating Prelab 4: Vibrating Chladni Plates

PHYS 1320

Fall 2016

Due at the beginning of class.

1) Consider a one-dimensional vibrating bar. Assume the center **and** the edges are anti-nodes. What is the wavelength of the resonant frequency in terms of the length of the bar, L ? Explain your answer and draw an example.

2) For a vibrating circular disk driven from the center, draw the first four harmonics. Estimate the wavelength of each resonance in terms of the diameter of the disk, D . Does this pattern make up a harmonic series? *Hint: Think about the one-dimensional bar in question 1.*