

## Questions on Percussion Instruments.

1. What are modes of vibration for a circular membrane? Give some examples.
2. Why don't most drums have a specific pitch?
3. In class we looked at the first few vibrational modes of a circular membrane and also a rectangular membrane. How are they similar? How are they different?
4. Draw the (5,0) and (5,1) modes for the body of a cylindrical drum.
5. In what way does the air inside a guitar function similarly to the air inside a drum?
6. Draw the 5<sup>th</sup> mode of a free rod.
7. Which mode is emphasized by suspending a bar from the points one quarter and three quarters along its length? Explain.
8. What is different about a xylophone and a vibraphone that make them sound different?
9. What effect does different decay rates for various overtones of a percussion instrument have on the perceived pitch?
10. What is the purpose of resonance tubes below the bars of a vibraphone and marimba?
11. What is the purpose of trimming the bottom side of a marimba bar?
12. Draw the 5<sup>th</sup> mode of a rod with one end fixed.
13. Why does a timpani drum have a perceived note but a cymbal does not?
14. Why does the tabla play a perceived note but a snare drum does not?
15. How does virtual pitch cause the strike tone of an orchestral chime?
16. What is a gamelan?
17. In class and in the book you saw some pictures of holograms of ancient Chinese bells. Explain what the holograms showed.
18. What is a Theremin?