INFO 448

Take home Quiz1

Name_____   Due September 19

1. If C_1 has a frequency of 32.7 Hz., what is the frequency of the following pitches:

- G_4 =
- Bb_4 =
- $F\#_5$ =

explain how did you calculate these frequencies.

Note: *G_4 is 55 semitones/half steps away from C_1; Bb_4 58 semitones; and $F\#_5$ 66 semitones.*

15 points

2. Beats are created by the frequencies of a) 440 Hz. and 443 Hz. and b) 622.25 Hz. and 623 Hz. when sounded together. How often would you hear the beat pattern in seconds ?

a) every   seconds
b) every   seconds

10 points

3. The frequencies of 448 Hz. and 522.666 are played very loudly. What difference tone will be created ?

Hz.

20 points

4. If A3 has a frequency of 220 Hz. what will be the frequency of the following sounds in

	Pythagorean,	Just Intonation and	Equal Temperament tunings ?
C#3	Hz.	Hz.	Hz.
E4	Hz.	Hz.	Hz.
F#5	Hz.	Hz.	Hz.

how did you calculate each frequency ?

18 points

5. You have an old NEXT computer that uses a sampling rate of 22,050 samples/second. What are the aliases that will appear when you try to play a sine tone of 17040 Hz. ?

6. When creating a 27.5 Hz. tone with 6 partials and a loudness of 64 sones and using Audacity to hear and look at the result, you notice that although it does not sound very loud, the amplitude vs. time graph shows that the wave has a rather high amplitude. Explain why.

12 points

Please type your answers and email me the quiz.