

**Music 170 Homework problem set 4 (due Oct. 23)**

1. A musical tone contains four partials, each at 50 decibels power level. What is the overall sound power level of the tone?
2. A professor is speaking 1 meter away from you. You move to a seat 4 meters away. By how many decibels does the level of the sound decrease?
3. How many decibels louder must a 50-Hz. pure, sinusoidal tone be than a 5000-Hz. one to be audible? (Assume there is no other sound present.)
4. What is the sound intensity level 10 meters away from a (spherical) sound source emitting one watt of power?
5. Suppose a stereo system at gain setting "11" puts out twice the amplitude it puts out at gain setting "10." How does the power compare? How many decibels more will come out?