
PHYS 1110 Worksheet: Sound intensity

1. The intensity of sound, if there is no absorption or reflection of its energy, is inversely proportional to the square of the distance from the source. Why?
2. A sound intensity of 85 decibels is the upper limit of what is considered safe: sounds louder than that, over time, damage human hearing. What is the intensity, in watts per square meter, of sound at 85 decibels?
3. What is the difference in intensity (W/m^2) between the quietest sound a human can hear (0 dB) and the loudest sound that is not painful (110 dB)?