NAME _____ DATE _____ CLASS _____

Section 13-2

HOLT PHYSICS

Concept Review

Sound Intensity and Resonance

Refer to the following table to answer the following questions.

Intensity (W/m^2)	Decibel level (dB)
1.0×10^{-9}	30
1.0×10^{-8}	40
1.0×10^{-7}	50
1.0×10^{-6}	60

Intensity (W/m^2)	Decibel level (dB)
1.0×10^{-5}	70
1.0×10^{-4}	80
1.0×10^{-3}	90
1.0×10^{-2}	100

1. While practicing his instrument at home, a young drummer produces sounds with 0.5 W of power. Assume the sound waves spread spherically, with no absorption in the medium.

a. What is the intensity of the sound waves that reach the walls of his room 2.00 to 4.00 m from the drum?

_____

b. What is the intensity of the sound waves that reach the family room, 8.00 to 12.0 m from the drum?

_____

c. What is the intensity and approximate decibel level of the sound waves that reach the neighbors' home 50.0 m away?

_____

2. The sound level 5.00 meters away from a jackhammer is exactly 100 dB.

a. What is the intensity of the sound at that point?

_____

b. What is the power of the sound from the jackhammer?

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c. At what distance from the jackhammer will the noise intensity decrease to 1.00×10^{-8} W/m^2?

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