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Chapter 12 – Sound PP A – Intensity of Sound Waves

1. Calculate the intensity of the sound waves from an electric guitar’s amplifier at a distance of 5.0 M when its power output is equal to each of the follow values:

a. 0.25 W

b. 0.50W

c.2.0 W

1. At a maximum level of loudness, the power output of a 75-piece orchestra radiated as sound is 70.0 W. What is the intensity of these sound waves to a listener who is sitting 25.0 m from the orchestra?
2. If the intensity of a person’s voice is 4.6 x 10-7 W/m2 at a distance of 2.0 m, how much sound power does that person generate?
3. How much power is radiated as sound from a band whose intensity is 1.6 x 10-3 W/m2 at a distance of 15 m?
4. The power output of a tuba is 0.35 W. At what distance is the sound intensity of the tuba 1.2 x 10-3 W/m2?