Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Intensity of Sound Waves**

**Directions: Solve the following problems. Show all your work for full credit.**

1. Calculate the intensity of the sound waves from an electric guitar’s amplifier at a distance of 5.0 m when the power output is equal to each of the follow:
   1. 0.25W
   2. 0.50W
   3. 2.0W
2. An orchestra with 75 instruments radiates sound at 70.0W. What is the intensity of these sound waves to a listener who is sitting 25.0m from the orchestra?
3. The power output of a tuba is 0.35W. At what distance is the sound intensity of the tuba 0.0012W/m­2 ?
4. 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 the person generate?