Physics 151 Class Exercise: Sound

1. Residents of Hawaii are warned of the approach of a tsunami (tidal wave) by sirens mounted on the top of towers. Suppose a siren produces a sound that has an intensity level of 120 dB at a distance of 2.0 m. Treating the siren as a point source of sound, and ignoring reflections and absorption, find the intensity level heard by an observer at a distance of (a) 12 m and (b) 21 m from the siren. (c) How far away can the siren be heard?

Answer:

Answer:

Answer:
2. Twenty violins playing simultaneously with the same intensity combine to give an intensity level of 82.5 dB. (a) What is the intensity level of each violin? (b) If the number of violins is increased to 40, will the combined intensity level be more than, less than, or equal to 165 dB? Explain.