

Engineering Boot Camp: Problem Set

Sound

Decibels:

1. A teacher measures a talking student with a sound meter and gets a reading of 70 dB. What would the sound meter read for each of the other students?

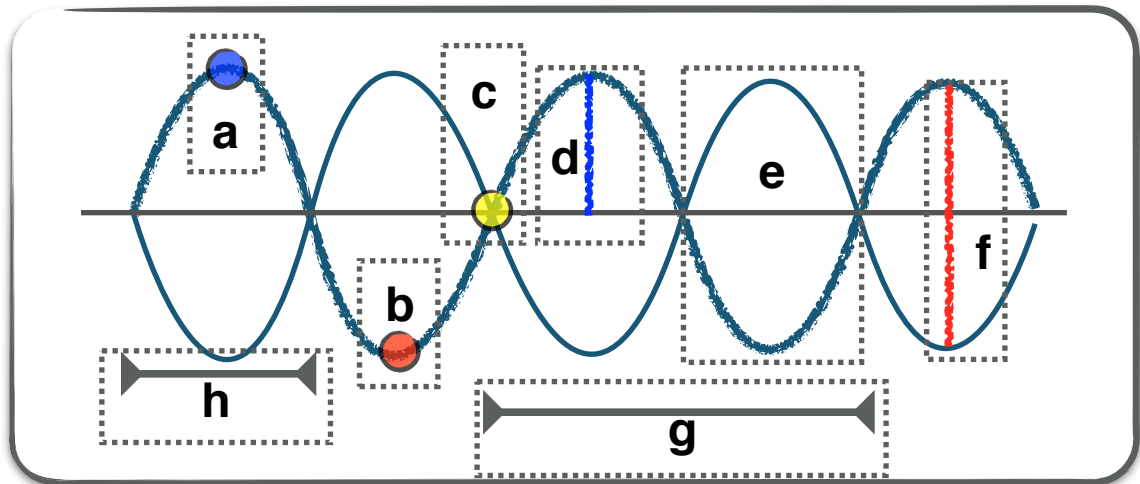


2. A teacher measures another student and gets a reading of 65dB. How many times louder (or softer) were each of the other presentations?



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In the diagram, the amplitude of the wave is shown by _____.

In the diagram, the wavelength of the wave is shown by _____.

In the diagram, a node of the wave is shown by _____.

In the diagram, an antinode of the wave is shown by _____.

In the diagram, the crest of the wave is shown by _____.

How many nodes and antinodes are shown in the standing wave above?

3. The period of an 8m long wave is 4 seconds. What is the velocity of the wave?
4. If a sound wave is traveling when the temperature is 20°C and has a wavelength of 2.45 m, what is the frequency of the sound?
5. How long is a wave that has a frequency of 440 Hz and is moving through sea water at 1530 m/s?
6. You are listening to an outdoor concert on a day when the temperature is 0°C. The sound of a wavelength of 0.490 m is emitted by a flute on the stage 125 m from where you are standing.
 - a. What is the time elapsed before you hear the sound emitted from the stage?
 - b. What is the frequency of the sound?

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7. Two waves approach each other on a single spring. Show the result when the waves meet together.

