

Name _____

Dog or Cat Person? _____

Show your work, round to the correct significant figures, circle your answers, and label them with units. Use the speed of sound of 343 m/s

1. Two speakers 4.00 m apart are in phase at 877.24 Hz. If I am 1.450 m from one speaker, and 3.210 m from the other, how many wavelengths difference is the distance, and is it constructive (loud) or destructive (quiet) interference?

2. A car with a horn that is 216 Hz is driving at 32.1 m/s away from you. What frequency do you hear?

3. If you hear the 216 Hz horn of the car at a frequency of 225 Hz, what is their velocity? Is it away from you or toward you?

4. You run at 12.5 m/s toward a stationary speaker that is emitting a frequency of 518 Hz. What frequency do you hear?

5. If you are moving so you hear the frequency of the 518 Hz speaker at a frequency of 557 Hz, what is your velocity? Is it away from or toward the speaker?