

Name _____ Hour _____

Wave Problems

___ pts., due _____

Show all of your work!

1. The speed of light is _____
2. Radio waves travel at what speed? _____
3. What other unit is a Hz equal to? _____ --
4.
 - a. Find the speed of a wave if it has a frequency of 280 Hz and a wavelength of 2 meters. (*ans. 560 m/s*)

 - b. How long will it take the wave in part a to travel one mile? (*ans. 2.87 sec.*)

 - c. What is the period of the wave? (*ans. 0.0036 sec.*)
5. A typical light wave has a wavelength of 580 nm. ($1 \text{ nm} = 10^{-9} \text{ m}$) Calculate the frequency of that wave. (*ans. $5.17 \times 10^{14} \text{ Hz}$*)

6. A sound wave produced by a clock chime is heard 515 meters away 1.5 seconds later. The period of the sound wave is 0.00229 second. What is the wavelength of the sound wave? (*ans. 0.79 m*)

7. If a sound wave has a frequency of 133 Hz and a wavelength of 2.5 meters, how long would it take for you to hear the sound if you were 50 meters away from the source of it? (*ans. 0.15 sec.*)

