Speed Frequency and Wavelength Worksheet 1

This worksheet is designed to give you some practice using the general wave equation: $v = \lambda f$. You'll be expected to use this equation correctly or the upcoming chapter test, sound lab and TAKS test.

1. What is the v if λ = 8 m and f = 20 Hz?

2. What is the λ if v = 50 m/s and f = 25 Hz?

3. What is the f if v = 50 m/s and λ = 10 m?

4. What is the v if λ = 1 m and f = 345 Hz?

5. What is the λ if v = 100 m/s and f = 3 Hz?

6. What is the f if v = 120 m/s and λ = 3 m?

7. What is the v if λ = 3 m and f = 10 Hz?

8. What is the λ if v = 345 m/s and f = 790 Hz?

9. What is the f if v = 345 m/s and λ = .25 m?

10. Joe the whistle maker knows that the maximum volume for a whistle will occur if the length of the whistle is exactly ¼ of the wavelength. If Joe must make a whistle that plays at a pitch of 320 Hz, how long will the whistle be?

11. How long is the wavelength of KAJA radio whose broadcast frequency is 97.1 MHz? (97.1 MHz =97,100,000 Hz and v = 300,000,000 m/s)

12. Using the velocity of sound at 343 m/s and given the frequencies of a piano scale, compute the wavelengths of that scale.

Note	Frequency	Wavelength	Note	Frequency	Wavelength
C_4	261.6		G_4	392	
D_4	293.6		A_4	440	
E_4	329.6		B_4	493.9	
F_4	349.2		C_5	523.2	

13. What is the relationship of the frequencies of notes C_4 and C_5?

14. What is the relationship of the wavelengths of notes C_4 and C_5?

15. What happened to the wavelength as the frequency increased between notes C_4 and C_5?