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 on the upcoming chapter test, sound lab and TAKS test.

1. What is the v if $\lambda = 8$ 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 $\lambda = 10$ m?
4. What is the v if $\lambda = 1$ 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 $v = 100$ m/s and $\lambda = 3$ m?
7. What is the v if $\lambda = 3$ m and $f = 10$ Hz?
8. What is the λ if $v = 345$ m/s and $f = 700$ Hz?
9. What is the f if $v = 340$ m/s and $\lambda = .25$ 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		C_5	392	
D_4	293.6		A_5	440	
E_4	329.6		B_5	493.9	
F_4	349.2		C_6	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_5 and C_6?
15. What happened to the wavelength as the frequency increased between notes C_4 and C_5?