**Waves**

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|  | **Frequency and Period:**  |
| 80.0 Hz | 1. A wave passes every 0.0125 seconds. What is the frequency with which waves pass? |
| 0.00382 s | 2. Middle C is 261.6 Hz. What is its period? |
| 10. Hz | 3. What is the frequency of a wave that has a period of 0.10 seconds? |
| 0.37 Hz | 4. An earthquake wave has a period of 2.7 seconds. What is its frequency?  |
|  | **Velocity, Frequency, and Wavelength:**  (looks like c = fλ in the data packet) |
| 5400 m/s | 5. What is the velocity of an earthquake wave that has a frequency of 12 Hz, and a wavelength of 450 m? |
| 2540 Hz | 6. What is the frequency of a sound wave (v = 343 m/s) that is 0.135 m long? |
| 3.28 m | 7. What is the wavelength of a, 91.5x106 Hz (91.5 MHz) radio wave? (v = c = 3.00x108 m/s) |
| 3.3 m/s | 8. What is the velocity of ocean waves if they have a wavelength of 13.2 meters, and a frequency of 0.25 Hz? |
| 2.6 Hz | 9. What is the frequency that 16 m long boxcars pass a crossing when the train is going 42 m/s? |
| 1.31 m | 10. What is the wavelength of a sound wave with a frequency of 261.6 Hz? (v = 343 m/s) |
| 7.14x1014 Hz | 11. What is the frequency of a 420. nm (420.x10-9 m) light wave? (v = c = 3.00x108 m/s) |
|  | **Velocity, Frequency, Period and Wavelength:**   so  |
| 72.5 m/s | 12. What is the speed of a wave with a wavelength of 14.5 m, and a period of 0.20 s? |
| 0.012 s | 13. What is the period of a 4.2 m wavelength sound wave? (v = 343 m/s) |
| 3.0x108 m/s | 14. What is the speed of a wave with a wavelength of 150 m, and a period of 0.50μs  (0.50x10-6 s)? |
| 3.33x10-10 s3.0x109 Hz(3.0 GHz) | 15. What is the period of an electromagnetic wave with a wavelength of 0.10 m? (v = c = 3.00x108 m/s) What is the frequency? |