

Unit 4C • Hd 2**CALCULATION PRACTICE****Formulas and Constants**

$$c = \lambda \nu$$

$$\nu = \frac{c}{\lambda}$$

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$$c = 2.998 \times 10^8 \text{ ms}^{-1} \quad \lambda = \text{wavelength} \quad \nu = \text{frequency}$$

List all electromagnetic radiations from low energy to high. (See notes)

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- Green light has a wavelength (λ) of about 5.25×10^{-7} m. What is its frequency?
- Red light has a wavelength of about 6.90×10^{-7} m. What is its frequency?
- What is the wavelength of electromagnetic radiation having a frequency of 7.89×10^{17} Hz (s^{-1}) ?
- What is the wavelength of electromagnetic radiation having a frequency of 1.83×10^{18} s^{-1} ?
- What is the frequency of electromagnetic radiation having a wavelength of 3.33×10^{-8} m?
- The laser in a CD player uses light with a wavelength of 720 nm. What is the frequency of this light?
- An FM radio station has a frequency of 8.89×10^7 Hz (s^{-1}). What is the wavelength of this radiation in meters?
- The U.S. Navy has a system for communicating with submerged submarines. The system uses radio waves with a frequency of 76 s^{-1} . What is the wavelength of this radiation in meters?