

CHEM WAVE EQUATION PRACTICE - #1 of 4

$$\text{equations: } c = \lambda \nu$$

$$E = h \nu$$

$$\text{constants: } c = 3.00 \times 10^8 \text{ m/s}$$

$$h = 6.626 \times 10^{-34} \text{ Js}$$

BACKGROUND INFORMATION

- 1) What is “em”?
 - 2) Compare and contrast photon and quantum.
 - 3) What does the symbol “c” stand for in wave equations?
 - 4) Give the standard unit for c.
 - 5) What does the symbol “ λ ” (lambda) stand for in wave equations?
 - 6) Give one common unit for λ .
 - 7) What does the symbol “ ν ” (nu) stand for in wave equations?
 - 8) Give one common unit for ν .
 - 9) What does the symbol “E” stand for in wave equations?
 - 10) Give one common unit for E.
 - 11) What does the symbol “h” stand for in wave equations?
 - 12) What are TWO other ways to write Hz (Hertz)?
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MATH PROBLEMS

- 13) What is the wavelength of a wave that has a frequency of 3.59×10^5 Hz?
- 14) A photon in a wave has a frequency of 8.400×10^9 Hz. What is the energy of the photon?
- 15) Calculate the frequency of a wave with a wavelength of 9.1×10^{-5} m.
- 16) A quantum has a measured energy of 2.678×10^{-18} J. What is its frequency?
- 17) What is the wavelength of em radiation having a frequency of 8.0×10^{11} Hz?
- 18) What is the frequency of em radiation having a wavelength of 4.750×10^{-7} m?
- 19) What is the energy of em radiation having a frequency of 6.50×10^{10} Hz?
- 20) What is the energy of a photon with a frequency of 4.48×10^{12} Hz?