

Answer on Question #49201, Physics, Other

What is the frequency of the light emitted by a laser pointer whose wavelength is 670 nm

Solution.

For all kinds of waves we have a relation (wave equation):

$$v = \lambda f$$

Where v is a speed of a wave, λ – its wavelength and f is a frequency of a wave.

Speed of light equal to:

$$c = 3 \cdot 10^8 \frac{m}{s}$$

So we can compute the frequency:

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

Numerically:

$$f = \frac{3 \cdot 10^8 \frac{m}{s}}{670 \cdot 10^{-9} m} \approx 4.48 \cdot 10^{14} Hz = 448 THz$$

Answer: $f = 4.48 \cdot 10^{14} Hz = 448 THz$