Example Of Energy Equation Problem

What is the frequency of light that has an energy of 4.38×10^{-19} J ?

By Dimensional Analysis

1. f (Hz)?
2. 4.38×10^{-19} J

   $6.60 \times 10^{-34} \frac{J}{Hz}$
3. $(4.38 \times 10^{-19} J)\left(\frac{1 Hz}{6.60 \times 10^{-34} J}\right) = 6.636 \times 10^{14} Hz = 6.64 \times 10^{14} Hz$

By Equation

1. f (Hz)?
2. $E = 4.38 \times 10^{-19}$ J

   $h = 6.60 \times 10^{-34} \frac{J}{Hz}$
3. $E = h \cdot f \Rightarrow f = \frac{E}{h} = \frac{4.38 \times 10^{-19} J}{6.60 \times 10^{-34} \frac{J}{Hz}} = 6.636 \times 10^{14} Hz = 6.64 \times 10^{14} Hz$