Using the constants provided with the equations, evaluate the energy from the Bohr model of Hydrogen for the lowest two energy levels (n=1 and n=2).

$$\frac{m_e k^2 e^4}{2n^2\hbar^2} = \frac{(9.11\times10^{-31})(8.99\times10^{9})^2(1.602\times10^{-19})^4}{2(1.05\times10^{-34})^2}$$

2.199×10^{-18} Joules (n=1)

0.550×10^{-18} Joules (n=2) $\frac{1}{4}$ of previous

strictly speaking these are "binding" energies and are negative

What frequency of light would promote an electron from the n=1 to n=2 orbital? In other words, what frequency of light has an energy equal to the difference between the n=1 and n=2 energies?

$\Delta E = 1.649\times10^{-18}\ J = hf$

$1.649\times10^{-18} = (6.63\times10^{-34})f$

$f = 2.49\times10^{15}$ Hz

Perform a frequency analysis on the following poem by Ogden Nash.

~~Fleas~~
~~Adam~~
~~Had 'em.~~

treating capital & small letters as same, neglect spaces, apostrophes, etc.

a: 4 l: 1
d: 2 m: 2
e: 2 s: 1
f: 1
h: 1