



1)⁴ The threshold wavelength for the photoelectric effect for silver is 262 nm. What is silver's work function?

equations

$$E_n = \frac{-13.61eV}{n^2}$$

$$K = hf - \phi$$

$$c = \lambda f$$

$$E_{\text{photon}} = \frac{hc}{\lambda} = hf$$

$$hc = 1240eVnm$$

2) In Hydrogen, the Lyman α transition is between $n = 2$ and $n = 1$.

a)⁴ Find the wavelength of the photon emitted when an electron makes this transition

b)¹ In the model of the Hydrogen atom right, draw an arrow showing the electron transition that would cause the emission of the Lyman alpha photon calculated above.

c)¹ Emission spectra look like (pick one)

- 1) bright lines on a dark background
- 2) dark lines on a colorful spectrum background

