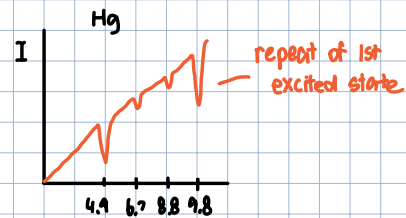
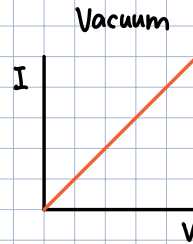
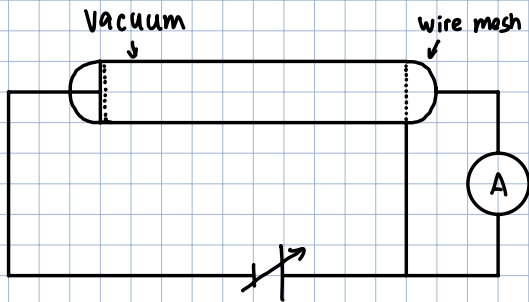
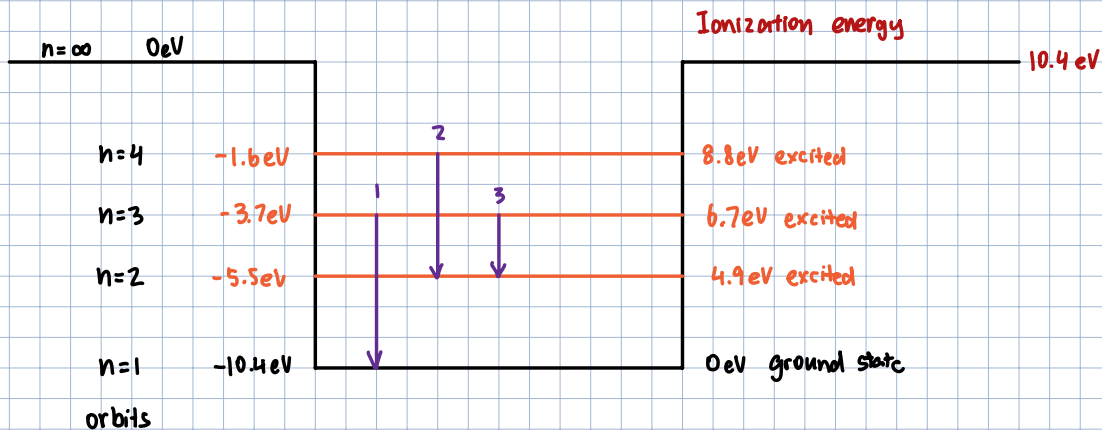


$$\begin{aligned}
 E &= qV \\
 &= (1e)(2V) \\
 &= 2eV
 \end{aligned}$$



Energy Well Diagram



What wavelength of light is emitted in each case?

1:

$$\Delta E = E_f - E_i$$

$$= 0 - 6.7$$

$$= -6.7eV$$

$$E = 6.7eV = 6.7(1.6 \times 10^{-19}) = 1.07 \times 10^{-18}$$

$$E = hf \quad f = \frac{E}{h} = 1.62 \times 10^{15}$$

$$\lambda = \frac{c}{f} = 185nm$$

Negative means it lost 6.7eV of energy

2:

$$317.9 \times 10^{-9}$$

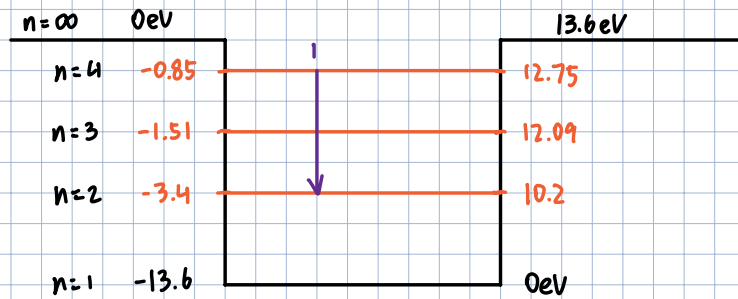
$$= 317.9 \text{ nm}$$

3:

$$688.8 \text{ nm}$$

Hydrogen

$$E_n = \frac{-13.6}{n^2} \text{ eV}$$



1: 486 nm

find wavelength from 6th to 3rd

$$n=7 \text{ to } n=4 \quad \Delta E = E_4 - E_7$$

$$= -0.57$$

$$\lambda = 2.17 \mu\text{m}$$