

**Worksheet #6**

Monday, April 22, 2024

**Name:**

**Questions (5 pts):**

The lifetime of the 2p state in the hydrogen atom is 1.6 ns.

- 1) What is the natural width of the 2p state of the hydrogen atom ( $\hbar = 6.6 \times 10^{-16}$  eV\*s) ?
  
  
  
  
  
  
  
  
  
  
- 2) How does it compare to the energy gap between  $n = 2$  and  $n = 1$  states of the hydrogen atom?

**If you have time:** same as above but for the He<sup>+</sup>.