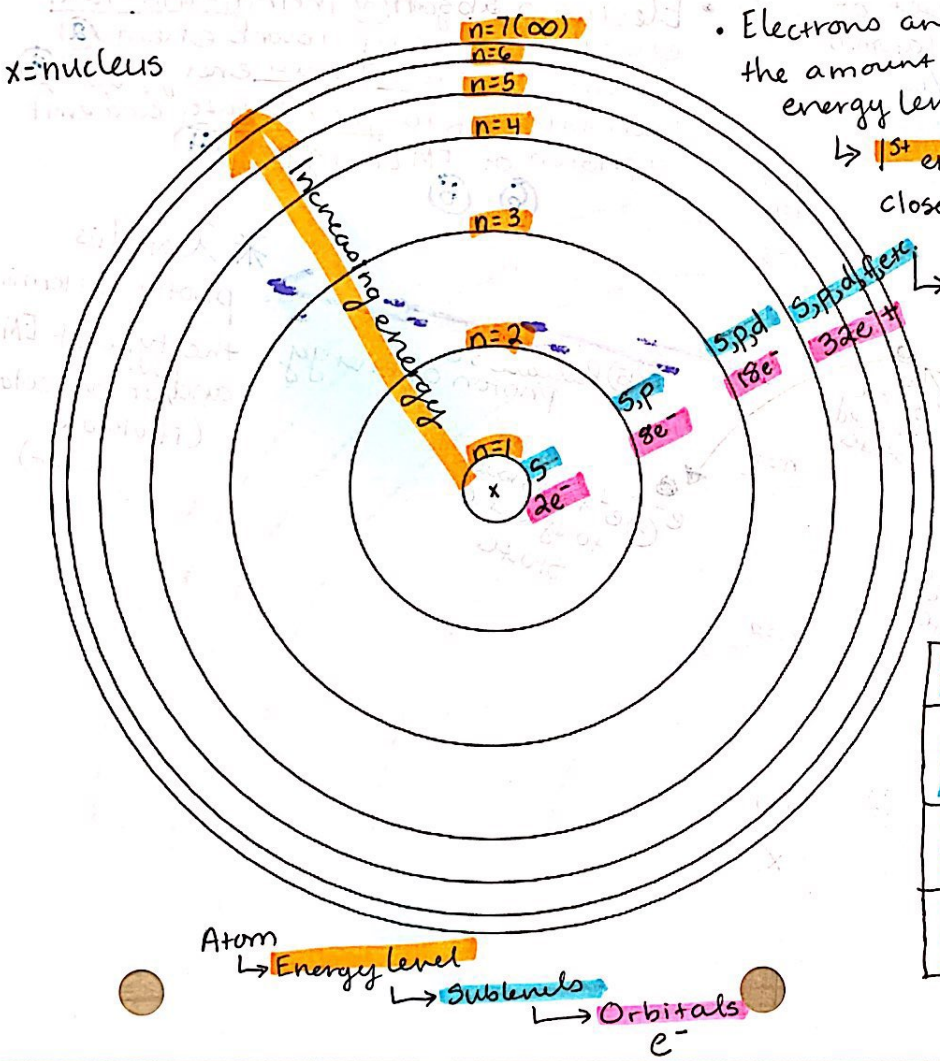
Name: Date: Pd:

# UNIT 3, SEC 3 - ORGANIZATION OF THE ATOM - BOHR MODEL




- Electrons are arranged in **energy levels** based on the amount of energy they possess (outermost energy level = valence $e^-$)
  - ↳ 1st energy level - n=1 - lowest energy level, closest to the nucleus; hold $2e^-$
  - ↳ 2nd energy level + beyond - n=2+ - as you move up/out, increasing amt. of energy + increasing # $e^-$ (but still only a max of 8 v.e.$^-$)
- In energy levels, electrons are further organized into **sublevels**
  - ↳ s, p, d, or f - corresponds to their shape + max # of $e^-$

| | | | Total $e^-$ |
|---|---|---|---|
| s | x | 1 orbital (variation) | $2e^-$ |
| p | ∞ | 3 orbitals | $6e^-$ |
| d | | 5 orbitals | $10e^-$ |
| f | | 7 orbitals | $14e^-$ |

* An orbital of any sublevel can hold 2 $e^-$

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# Absorption and Emission of Energy from Atoms ①

- Every element emits a specific set of λ's of electromagnetic radiation (atomic spectrum) as its electrons move b/w energy levels.

- Electrons begin @ their ground state energy level, they absorb energy ② and move to excited state energy level ③ then fall back to ground state ④, and emit a photon of EM energy. ⑤