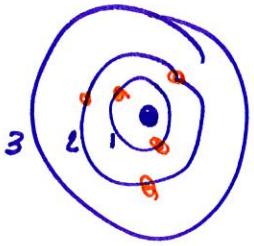
Electron Arrangements

Bohr model

- e^- move in orbits around the nucleus, each orbit has a specific amount of energy.



- The closer to the nucleus you get, the less energy the orbit has

Quantum Mechanical Model

Bohr & Schrödinger

- e^- move in <u>ORBITALS</u> around the nucleus (7 orbitals max)
  - Heisenberg Uncertainty Principle - you cannot know the exact location and speed (momentum) of an e^- at the exact same time.
  - suborbitals - 4 types - s, p, d, & f
    - s → 1, p → 3, d → 5, f → 7

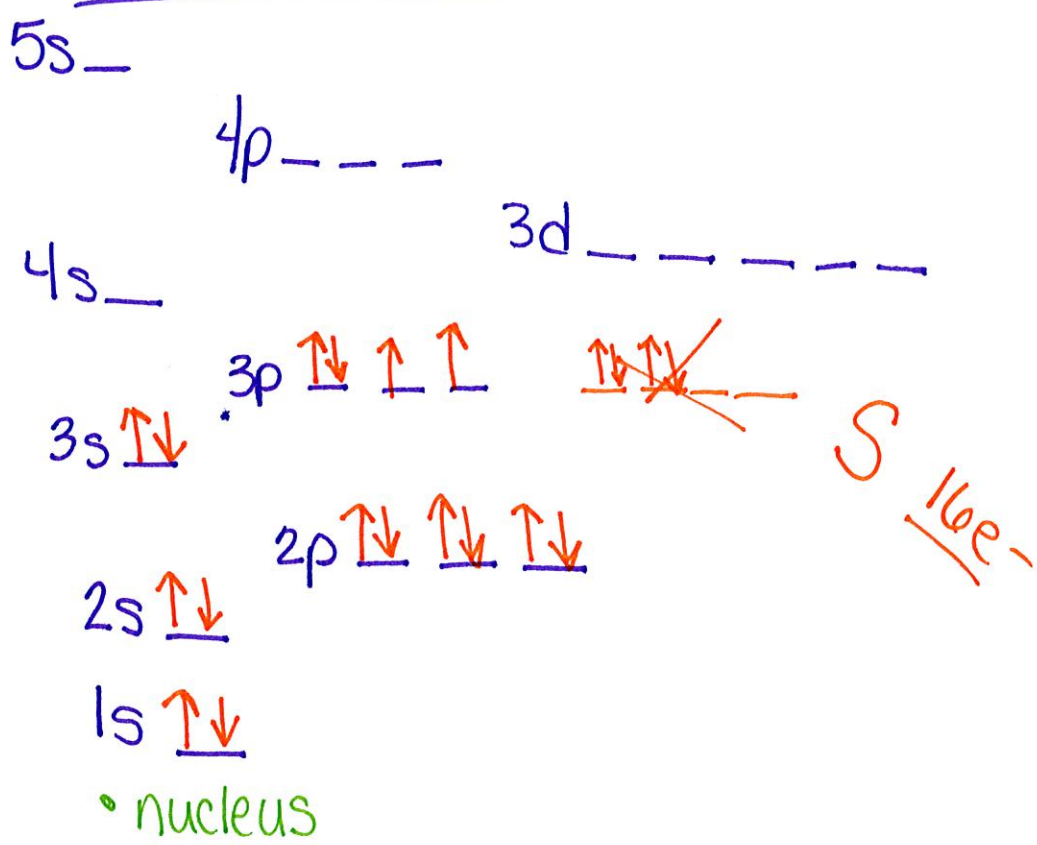
Rules for placing e^- into orbitals

1) Aufbau principle - e^- enter the lowest orbitals 1st
2) Pauli Exclusion principle - there can be a maximum of $2e^-$ in each suborbital
3) Hund's Rule - place $1e^-$ in each suborbital of an orbital before adding a 2nd e^-

3rd

Orbital Diagrams

e^- written as arrows ↑ or ↓



Electron Configurations - writing out the e- arrangement

$1s^2 2s^2 2p^6 3s^2 3p^5$