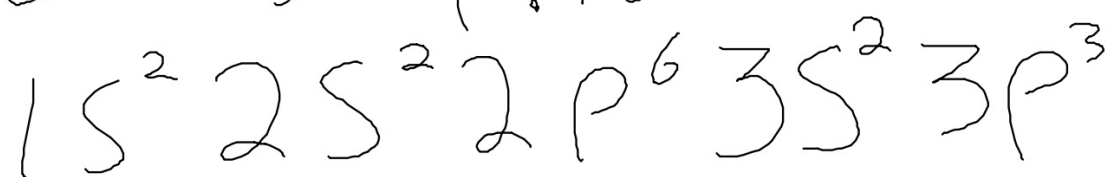


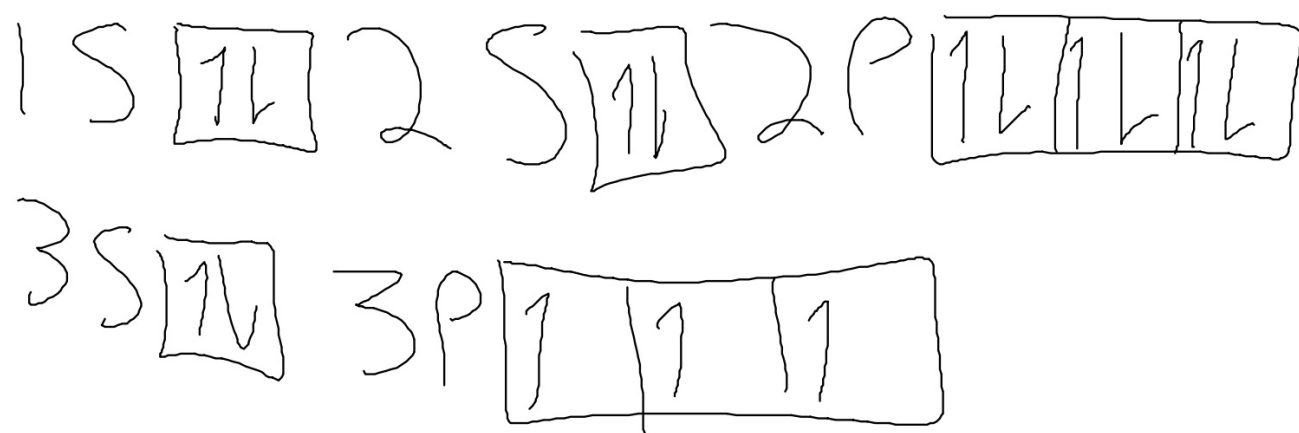
Do Now

- Take out last nights homework.
- On a whiteboard, write the electron configuration for Phosphorus.
- Have your lab partner write the orbital notation.

e^- config $P: 15e^-$



Orbital notation :



Today

- Brief review of electron configuration and orbital notation.
- Intro to Lewis dot structures.
- Time permitting: Waves, energy, and the Planck constant.

Sub-Orbitals

Row \rightarrow Energy Level

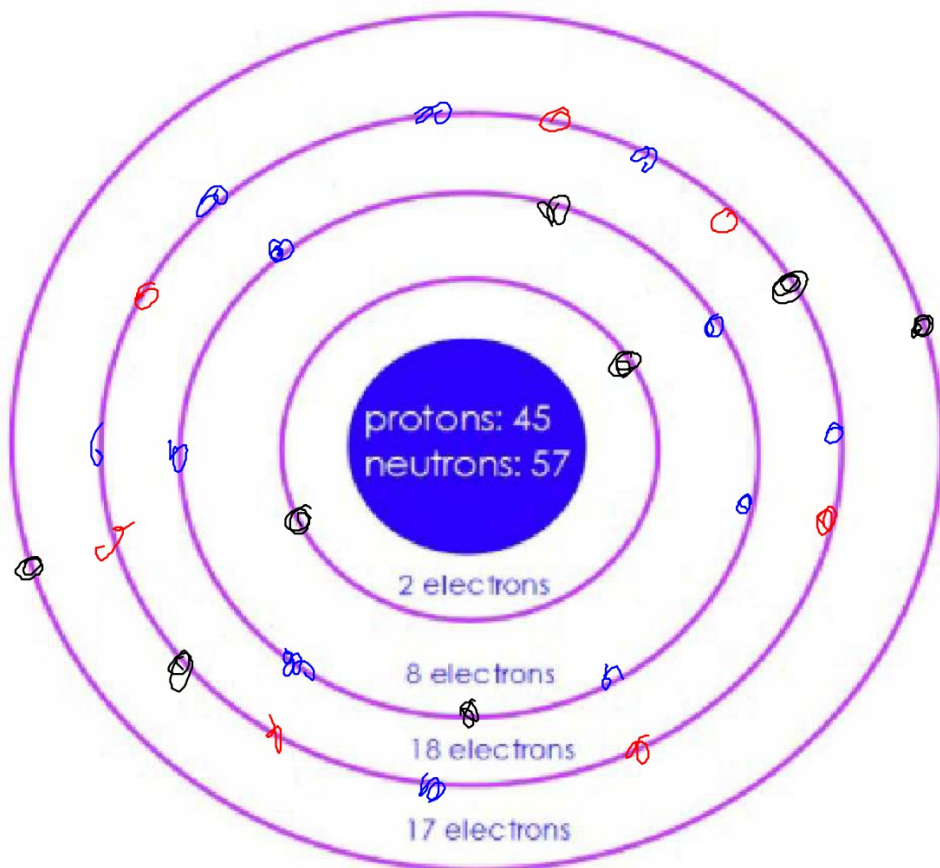
- s = Number of the period (row on periodic table).
- p = Number of the period.
- d = Number of period - 1.
- f = Number of period - 2

| | | Orbitals | | | |
|----------------------------------------------|---|----------|----|----|----|
| | | s | p | d | f |
| Principle Quantum Number (Energy Level, "n") | 1 | 1s | | | |
| | 2 | 2s | 2p | | |
| | 3 | 3s | 3p | 3d | |
| | 4 | 4s | 4p | 4d | 4f |
| | 5 | 5s | 5p | 5d | 5f |
| | 6 | 6s | 6p | 6d | 6f |
| | 7 | 7s | 7p | 7d | 7f |

Order: 1s 2s 2p 3s 3p 4s 3d 4p 5s 4d 5p 6s 4f 5d 6p 7s 5f 6d 7p

Reminder

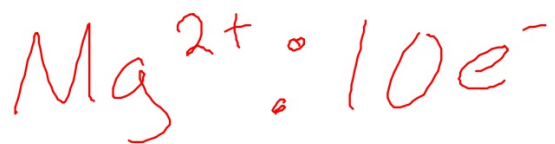
S
P
d



Fill in the electrons in order.

8 is the Magic Number

- 8 is the highest number of e^- that you can have on the outer energy level of an atom.
- This outer energy level is called a **valence shell**.
- The number of ~~atoms~~ ^{e^-} on the valence shell are the biggest factor in how atoms and molecules interact.



Lewis Dot Structure

- A way of noting the number of e⁻ on the valence shell of an atom.
- The valence shell can have anywhere between 1-8 electrons. No more, no less.

How Many Valence e-?

- 1) If the column in your PTE has an A, the number that precedes it is the number of valence electrons.
- If the Column has a B, it has 2 valence electrons. Why???



Lewis Dot Numbering Order

Lewis Dot Notation



Waves: Relating Wavelength, Frequency and energy of waves.

Go to other presentation.

PPT

Electron Configuration Gizmo

- Get a laptop for you and your partner.
- I will show you how to log into the website.
- Once you have logged onto the gizmo, check with the group on either side of you and assist them if they are not on.

Virtual Lab

- You will fill in the orbital notation for different elements.
- Note that the electron notation is visible as you add in electrons.
- Click the “check” button to make sure that you are correct before proceeding to the next problem.

Lab Submissions

- You and your lab partner will hand in one answer sheet for you group.
- Check with each other to make sure that you agree on the answers.
- You have five minutes to put them in the box at the front. Leave the computers on the side counters for next class.

