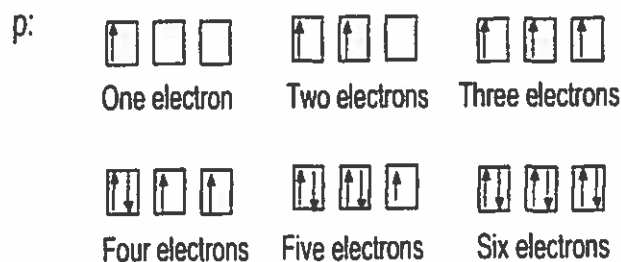
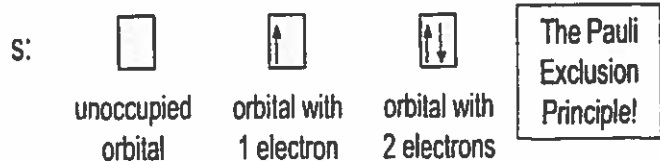


Electron Configuration PRACTICE

Name _____ # _____

Date _____ Per. _____

I. Filling in electrons: Electrons get filled into orbitals individually:



Hund's Rule: fill orbitals singly first, then start pairing!

Writing Electronic Configurations

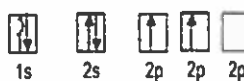
To determine the electron configuration:

- 1) Find the number of electrons for the element.
- 2) Fill the electrons in order of the Aufbau Principle.
- 3) Use Hund's Rule and the Pauli Exclusion Principle for orbital diagrams.

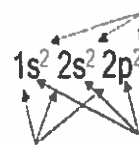
Example: Nitrogen - Element #7 → 7 electrons

Orbital Diagram

Electronic Configuration



The number of electrons within each set of orbit



- Each individual orbital gets a "box".
- Electrons are filled into the boxes until the total is reached.

The energy, or "n" level

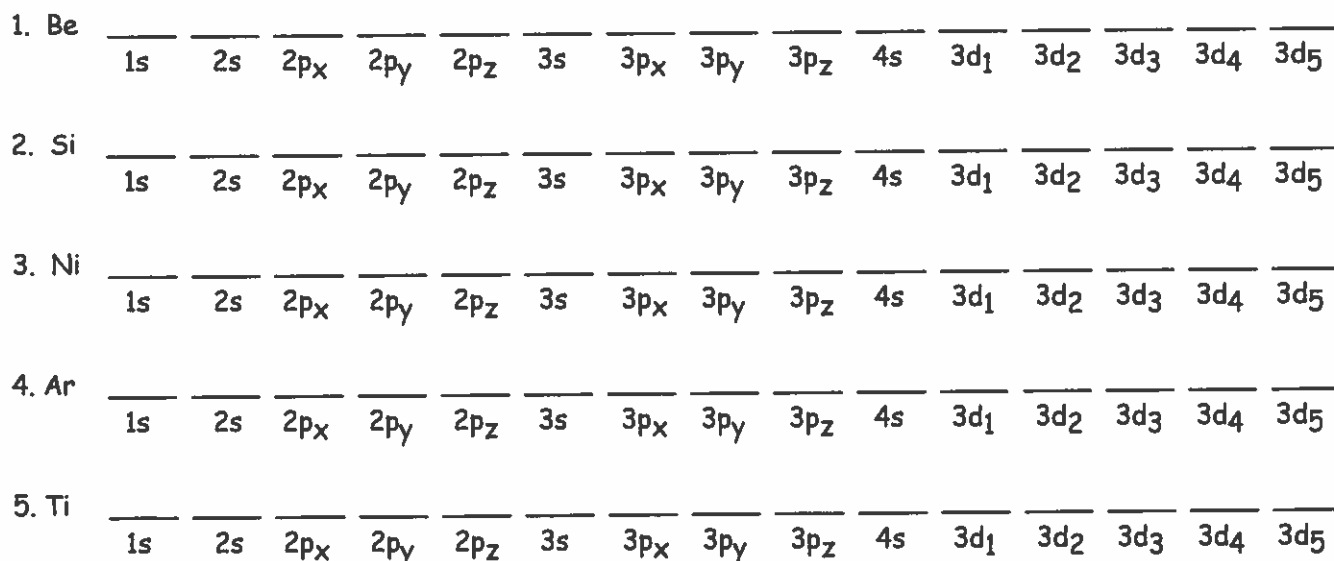
Using Iron with _____ number of e⁻

Draw the Orbital Diagram:

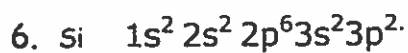


Write the Electron Configuration for Fe:

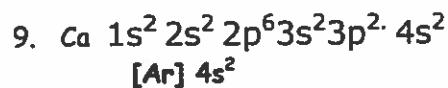
Draw the orbital notation diagrams for the following elements.



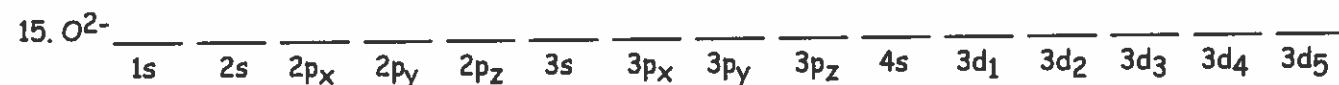
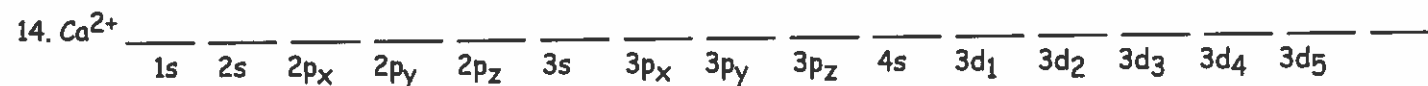
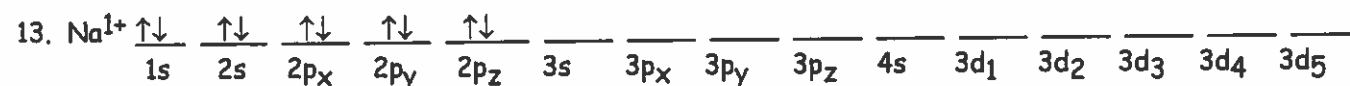
Write the electron configuration for the following elements.



Write the noble gas configuration for the following elements.



Draw the orbital diagrams for the following IONS. This will be the same orbital diagrams as a neutral atom except you've added or subtracted some arrows to represent the electrons that were added or subtracted. See Na for an example.



Write the electron configuration for the following IONS.

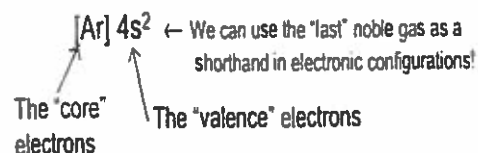
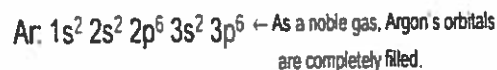


Write the noble gas configuration for the following IONS.



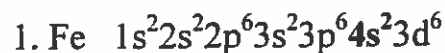
Electronic Configuration Shorthand

Consider the electronic for Argon and Calcium:

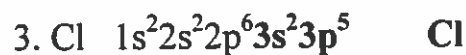
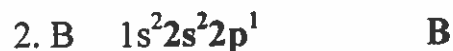


Not only are shorthand configurations easier to write, but they identify the valence electrons, which are the electrons that are available for reaction!

Draw Electron Dots (Valence Electrons = S + P)



Fe



Electron Configuration Practice Worksheet

In the space below, write the unabbreviated electron configurations of the following elements:

- 1) sodium _____
- 2) iron _____
- 3) bromine _____
- 4) barium _____
- 5) neptunium _____

In the space below, write the abbreviated electron configurations of the following elements:

- 6) cobalt _____
- 7) silver _____
- 8) tellurium _____
- 9) radium _____
- 10) lawrencium _____

Determine what elements are denoted by the following electron configurations:

- 11) $1s^2 2s^2 2p^6 3s^2 3p^4$ _____
- 12) $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6 5s^1$ _____
- 13) $[\text{Kr}] 5s^2 4d^{10} 5p^3$ _____
- 14) $[\text{Xe}] 6s^2 4f^{14} 5d^6$ _____
- 15) $[\text{Rn}] 7s^2 5f^{11}$ _____

Determine which of the following electron configurations are not valid:

- 16) $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 4d^{10} 4p^5$ _____
- 17) $1s^2 2s^2 2p^6 3s^3 3d^5$ _____
- 18) $[\text{Ra}] 7s^2 5f^8$ _____
- 19) $[\text{Kr}] 5s^2 4d^{10} 5p^5$ _____
- 20) $[\text{Xe}]$ _____