

VALENCE ELECTRONS

Name _____

The valence electrons are the electrons in the outermost principal energy level. They are always "s" or "s and p" electrons. Since the total number of electrons possible in s and p sublevels is eight, there can be no more than eight valence electrons.

For each element below write its electron configuration, underline the orbitals belonging to the valence, and determine the number of valence electrons.

Example: carbon

Electron configuration is $1s^2$ $\underline{2s^2 2p^2}$.

Carbon has 4 valence electrons.

- | | |
|---------------------|--------------------|
| 1. fluorine _____ | 11. lithium _____ |
| 2. phosphorus _____ | 12. zinc _____ |
| 3. calcium _____ | 13. carbon _____ |
| 4. nitrogen _____ | 14. iodine _____ |
| 5. iron _____ | 15. oxygen _____ |
| 6. argon _____ | 16. barium _____ |
| 7. potassium _____ | 17. aluminum _____ |
| 8. helium _____ | 18. hydrogen _____ |
| 9. magnesium _____ | 19. xenon _____ |
| 10. sulfur _____ | 20. copper _____ |

LEWIS DOT DIAGRAMS

Name _____

Lewis diagrams are a way to indicate the number of valence electrons around an atom.

$\text{Na}\cdot$, $\cdot\ddot{\text{Cl}}\cdot$, $\cdot\ddot{\text{N}}\cdot$
are all examples of
this type of diagram.

Draw Lewis dot diagrams of the following atoms.

1. calcium

6. carbon

2. potassium

7. helium

3. argon

8. oxygen

4. aluminum

9. phosphorus

5. bromine

10. hydrogen