Name _____ Date_____

DOES NOT INCLUDE EXAMPLES
3 = Any 7 problems
2 = Any 9 problems
1 = Any 11 problems
* Problems = Challenge Problems

Aufbau Diagram and Electron Configuration Practice (AP.1.4)

Show the **Aufbau diagram (use arrows to represent electrons)** with all of its electrons for the following atoms.

EX: Chlorine

1s	2s	2p	3s	3p	4s
___	___	___ ___ ___	___	___ ___ ___	___

1. Calcium

1s	2s	2p	3s	3p	4s
___	___	___ ___ ___	___	___ ___ ___	___

2. Nitrogen

1s	2s	2p	3s	3p	4s
___	___	___ ___ ___	___	___ ___ ___	___

In the space below, write the **electron configurations** of the following atoms:

EX: sodium _____

3. magnesium _____

4. carbon _____

5. potassium _____

6. phosphorus _____

7. fluorine _____

*8. vanadium _____

*9. bromine _____

Determine the **name of the elements** of the following electron configurations:

EX: $1s^2 2s^2 2p^6 3s^2 3p^4$ _____

10. $1s^2 2s^2 2p^6 3s^2 3p^6$ _____

*11. $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6 5s^1$ _____

*12. $[Kr]\ 5s^2 4d^1$ _____

Determine which of the following electron configurations are **CORRECT/NOT CORRECT:**

EX: $1s^2 2s^2 2p^6 3s^2 3p^6 4s^{10}$ _____

13. $1s^2 2s^2 2p^6 3s^3 3p^5$ _____

14. $1s^2 1p^6 2s^2 3p^4$ _____

*15. $[Kr]\ 5s^2 4p^{10} 5p^5$ _____

16. What is the electron configuration of an aluminum atom, Al?
    a. $1s^2 2s^2 2p^6 3d^3$
    b. $1s^2 2s^2 2p^6 3s^2 3p^1$
    c. $1s^2 2s^2 2p^6 2d^1 3s^2$
    d. $1s^2 2s^2 2p^6 2d^{10} 3s^2 3p^5$
    e. $1s^2 2s^2 2p^6 3s^2 3p^6 3d^7 4s^2$

*17. Which element has the electron configuration $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^2$?
    a. chromium atom
    b. copper atom
    c. titanium atom
    d. zinc atom

*18. What is the noble gas configuration for Pb atom?
    a. $[Xe]6s^2 4f^{14} 5d^{10} 6p^2$
    b. $[Xe]6s^2 4f^{12} 5d^{10} 6p^2$
    c. $[Xe]6s^2 4f^{14}$
    d. $[Rn]6p^4$
    e. $[Rn]\ 6s^2 4f^{14} 5d^{10}$