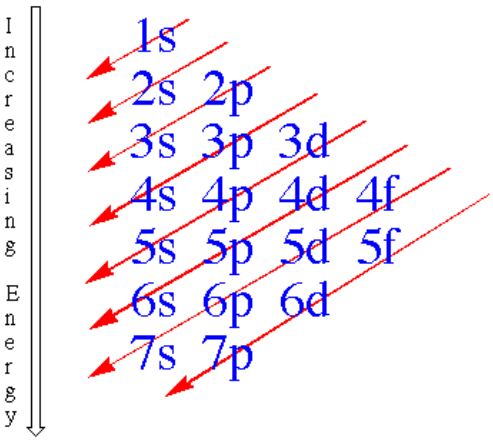
Noble Gas Configuration Name_____Blk___

The Noble Gas Configuration is another way to write electron configuration. It is very similar to regular electron configuration, but you can substitute the Noble Gas symbol to represent part of the configuration.



Example: The regular electron configuration for neon is $1s^2\ 2s^2\ 2p^6$, which represents 10 electrons. If we were going to write the electron configuration for sulfur, we would write $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^4$. This represents the configuration of the 16 electrons in sulfur. To write sulfur's noble gas configuration, we can substitute the symbol of the noble gas in for its electron configuration: [Ne] $3s^2\ 3p^4$. The [Ne] represents the first 10 electrons and then you show the configuration of the remaining electrons starting off where the noble gas filled the *p* orbital.

Example 2: Examine the Noble Gas configuration for Cu. [Ar] $4s^2\ 3d^9$. Argon is the last noble gas from the previous period, so his symbol [Ar] represents 18 electrons ($1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6$) and the $4s^2\ 3d^9$ represents how the rest of the electrons fill their orbitals after the 18 electrons of argon.

Write the noble gas notation for the following elements:

1. Mg (12 electrons) = **[Ne]$3s^2$**
2. Cl (17 electrons) = **[Ne]$3s^2 3p^5$**
3. Ti (22 electrons) = **[Ar]$4s^2 3d^2$**
4. Co (27 electrons) = **[Ar]$4s^2 3d^7$**
5. Br (35 electrons) = **[Ar]$4s^2 3d^{10} 4p^5$**
6. Rb (37 electrons) = **[Kr]$5s^1$**

7. Ag (47 electrons) = **$[Kr]5s^2 4d^9$**
8. Sn (50 electrons) = **$[Kr]5s^2 4d^{10} 5p^2$**
9. Al (13 electrons) = **$[Ne]3s^2 3p^1$**
10. Se (34 electrons) = **$[Ar]4s^2 3d^{10} 4p^4$**
11. Y (39 electrons) = **$[Kr]5s^2 4d^1$**
12. Fr (87 electrons) = **$[Rn]7s^1$**
13. W (74 electrons) = **$[Xe]6s^2 4f^{14} 5d^4$**
14. F (9 electrons) = **$[He]2s^2 2p^5$**
15. I (53 electrons) = **$[Kr]5s^2 4d^{10} 5p^5$**