

Silicon  $14e^-$   
 $1s^2 2s^2 2p^6 3s^2 3p^2$

Noble Gas Configuration

Start configuration with the Noble Gas  
one row above questioned element

$[Ne] 3s^2 3p^2$

→ Mercury Hg  $80e^-$

$[Xe] 6s^2 4f^{14} 5d^{10}$

→ Lead Pb

$[Xe] 6s^2 4f^{14} 5d^{10} 6p^2$

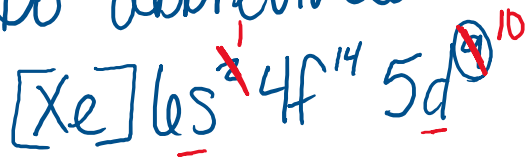
Atypical Configs  
(Exceptions)

# Bullies

The d & f orbitals like to be  $\frac{1}{2}$  full or full.

if it ends at  $d^4$ ,  $d^9$ ,  $f^6$ , or  $f^{13}$  they steal an electron from the nearest 's' orbital

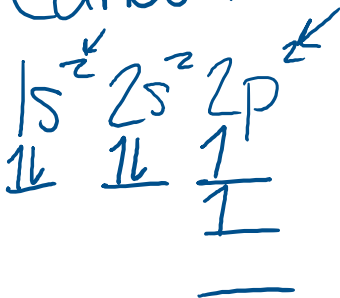
Do abbreviated config for Gold (Au)



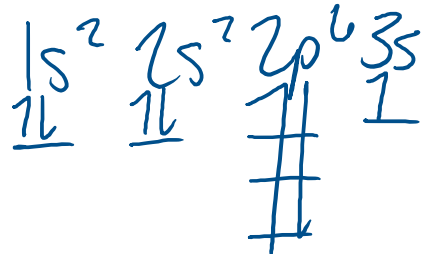
# Spin Diagram

A visual to place electrons

Carbon C  $1e^-$



Sodium Na  $11e^-$



## Step

1. Write the configuration
2. Draw a horizontal line representing each "room" in the orbital.  $\uparrow$   $\downarrow$
3. Draw your electron using  $\uparrow$  +  $\downarrow$  to represent their spins

↳ Pauli Exclusion Principle - an orbital can hold at most two electrons w/ opposite spins

↳ Hund's Rule (Hot bus seat Rule)  
The electrons will be placed one in a room until they must share.