Placing Electrons in Subshells

1. Aufbau principle- place e's in the lowest possible subshell that will available

2. Pauli exclusion principle - each subshell can hold a maximum of two e's. Each of these e's must be different in some way ie. electron spin (↑clockwise, ↓counterclockwise)

3. Hund's Rule - Place e's in the same "shape" of subshells as single e's (↑) before pairing them.

Mnemonic for Filling Orbitals

7	7s			
6	6s	6p	6d	
5	5s	5p	5d	5f
4	4s	4p	4d	4f
3	3s	3p	3d	
2	2s	2p		
1	1s			

Complete the orbital diagram and electron configuration for each of the following:

1. Be orbital diagram: ↑↓ ↑↓ (1s 2s) electron configuration: $1s^2 2s^2$

2. N orbital diagram: ↑↓ ↑↓ ↑ ↑ ↑ (1s 2s 2p 2p 2p) electron configuration: $1s^2 2s^2 2p^3$

Homework:

1. Complete orbital diagrams and electron configurations for the first 20 elements, Sc, Fe, Ti, and Kr.