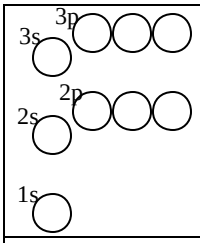
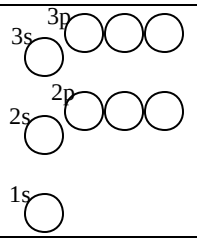
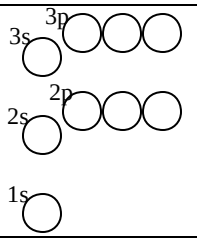
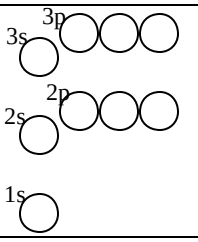
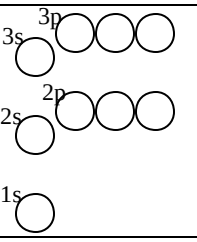
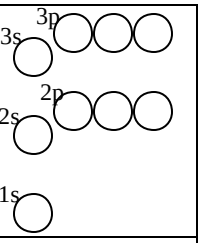
South Pasadena • Chemistry

Name _____
Period ___ Date ___/___/___

13 • Electron Configurations

WRITING ELECTRON CONFIGURATIONS

For each given element, fill in the orbital diagram and then write the electron configuration for the element.

1.	2.	3.	4.	5.	6.
					
Element: Ar # of e⁻'s: ___	Element: Mg # of e⁻'s: ___	Element: N # of e⁻'s: ___	Element: Li # of e⁻'s: ___	Element: P # of e⁻'s: ___	Element: Cl # of e⁻'s: ___

Write the electron configurations of each of these in **long form** and **short form**:

1. Ar

   Ar

2. Mg

   Mg

3. N

   N

4. Li

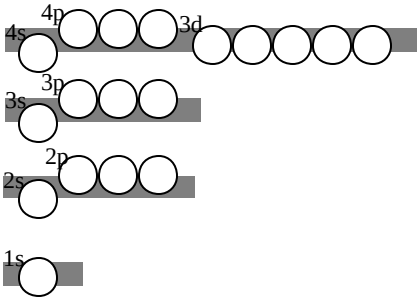
   Li

5. P

   P

6. Cl

   Cl

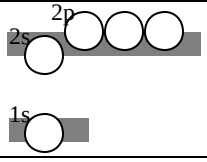
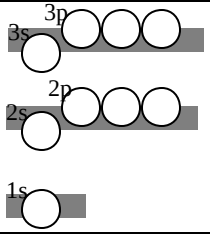
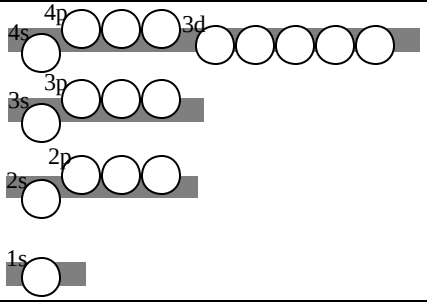
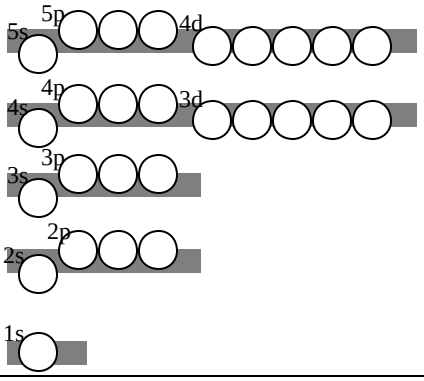


7. Fill in the orbital diagram for the element, Fe, and write the electron configuration of Fe in the long and short form.

   Fe

   Fe

Consider the O/S family:
Draw the orbital diagram and both forms of the electron configuration of four members of Family VI:
Write the **short form** and then the **long form** for each of these elements.
Draw a box around the valence electrons.

8.		Oxygen, O O O
9.		Sulfur, S S S
10.		Selenium, Se Se Se
11.		Tellurium, Te Te Te

Family Similarities and Valence Electrons:
Write the symbols for the valence electron (outermost s & p) found in the following elements. Note the similarities in the vertical columns. (electron configuration information is given on page 351 as well as on the periodic table located in the inside back cover of your text book)

Per	IA	IIA	IIIA	IVA	VA	VIA	VIIA	VIIIA
1	H • $1s^1$							He • $1s^2$
2	Li • $2s^1$	Be	B	C	N	O	F	Ne
3	Na • $3s^1$	Mg	Al	Si	P	S	Cl	Ar
4	K • $4s^1$	Ca	Ga	Ge	As	Se	Br	Kr
5	Rb • $5s^1$	Sr	In	Sn	Sb	Te	I	Xe
6	Cs • $6s^1$	Ba	Tl	Pb	Bi	Po	At	Rn
7	Fr • $7s^1$	Ra						