WORKSHOP 10 ELECTRONS. Name: _____

1. Using dots (or arrows) to represent electrons. Fill in the following Aufbau (Orbital) diagrams.

4p	___ ___ ___	___ ___ ___	___ ___ ___	___ ___ ___
3d	___ ___ ___ ___ ___	___ ___ ___ ___ ___	___ ___ ___ ___ ___	___ ___ ___ ___ ___
4s	___	___	___	___
3p	___ ___ ___	___ ___ ___	___ ___ ___	___ ___ ___
3s	___	___	___	___
2p	___ ___ ___	___ ___ ___	___ ___ ___	___ ___ ___
2s	___	___	___	___
1s	___	___	___	___
	selenium	**nickel**	**sulfur ion**	**chromium (VI) ion**

Using subshell notation, ($1s^2 2s^2$ etc) write complete electron configurations

Se _____ Ni_____

S^{-2}_____ Cr^{+6}_____

Now write abbreviated electron configurations using noble gas notation **[ ]** plus partially filled outer subshells. i.e. iron: $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^6$; abbreviated as **[**Ar**]**$4s^2 3d^6$

Se _____ Ni _____

S^{-2} _____ Cr^{+6} _____

2. Write the electron configurations of these elements and their ions:

Mg _____ Mg^{+2}_____

Cl _____ Cl^- _____

Cs _____ Cs^+ _____

As _____ As^{-3} _____

V _____ V^{+3} _____

Sn _____ Sn^{+2}_____ Sn^{+4} _____

3. Write symbols of three cations & three anions that are **isoelectronic** with neon: (isoelectronic means having the same number of electrons)

4. Write Lewis electron dot formulas showing the **valence electrons** of:
(Place the dots on the symbols)

F Se P Br Ga Si [Sb]$^{-3}$ K [Ca]$^{+2}$ Ba

5. Which of the following ions are isoelectronic with noble gases? Underline them.

Al^{+3} Cu^{+} Fe^{+3} Sn^{2+} Si^{-4} As^{5+} N^{-3}