Honors Chemistry

Worksheet 3-3 Name_____

Periodic Trends Period_____

1. Discuss the importance of Mendeleev's periodic law.

2. Identify each element as a metal, metalloid, or nonmetal.
   a) fluorine _____
   b) germanium _____
   c) zinc _____
   d) phosphorous _____
   e) lithium _____

3. Give two examples of elements for each category.
   a) noble gases _____
   b) halogens _____
   c) alkali metals _____
   d) alkaline earth metals _____

4. What trend in atomic radius do you see as you go down a group/family on the periodic table? What causes this trend?

5. What trend in atomic radius do you see as you go across a period/row on the periodic table? What causes this trend?

6. Circle the atom in each pair that has the largest atomic radius.

a)	Al	B	b)	S	O	c)	Br	Cl
d)	Na	Al	e)	O	F	f)	Mg	Ca

7. Define ionization energy.

8. Is it easier to form a positive ion with an element that has a high ionization energy or an element that has a low ionization energy? Explain.

9. Use the concept of ionization energy to explain why sodium form a 1+ ion (Na^{+}) but magnesium forms a 2+ ion (Mg^{2+}).

10. What trend in ionization energy do you see as you go down a group/family on the periodic table? What causes this trend?