Name _____ Period _____ Date Tuesday, November 1 2016

Periodic Trends

ATOMIC RADIUS

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

2. What causes this trend?

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

4. What causes this trend?

5. 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

6. Put the following elements in order from smallest to largest atomic radius ***and*** explain why:

C, O, Sn, Sr.

ELECTRONEGATIVITY

7. Define electronegativity

8. How does the ionic radius of a nonmetal compare with its atomic radius?

9. What trend in electronegativity do you see as you go down a group/family on the periodic table?

10. What causes this trend?

11. What trend in electronegativity do you see as you go across a period/row on the periodic table?

12. What causes this trend?

13. Circle the atom in each pair that has the greater electronegativity.

a) Ca Ga b) Li O c) Cl S d) Br As e) Ba Sr f) O S

GENERAL QUESTIONS

14. Which group tends to form +1 ions? _____

15. Which group tends to form +2 ions? _____

16. Which group tends to form -1 ions? _____

17. Which group tends not to form ions or react? _____

18. Based on the concept of periodic trends, answer the following questions for these atoms: ***Li, Be, Mg, Na***. Be able to defend your answers.

a. Which element has the lowest electronegativity? _____

b. Which element has the least metallic character? _____

c. Which element is the largest atom? _____

19. Based on the concept of periodic trends, answer the following questions for these atoms: ***P, S, Cl, F***. Be prepared to defend your answers.

d. Which element has the highest electronegativity? _____

e. Which element has the least metallic character? _____

f. Which element has the largest ion? _____

20. Based on the concept of periodic trends, answer the following questions for these atoms: ***Au, Zn, S, Si***. Be able to defend your answers.

a. Which element has the highest electronegativity? _____

b. Which element has the most metallic character? _____

c. Which element has the largest atom? _____

21. Complete the following chart:

	K	**Mg**	**Ne**	**N**	**Cl**	**Si**
Atomic #						
Period						
Group #						
Family name (if any)						
# of valence e^-						
# protons						
Metal, nonmetal, or metalloid?						
Conducts electricity? (yes/no)						
State at room temperature?						
Ion Formed? (positive, negative, none, varies)						

22. _____ metal

23. _____ chlorine

24. _____ metalloid

25. _____ transition elements

26. _____ group 1

27. _____ noble gases

28. _____ group 2

a. alkaline earth metals

b. metals with unpredictable properties

c. a halogen

d. make good semiconductors

e. alkali metals

f. has a full outer energy level (shell)

g. loses electrons in bonding

Instructions Fill in the arrows below with the following terms: *increasing electronegativity, increasing metallic character, increasing atomic radius, increasing nonmetallic character, increasing reactivity, decreasing atomic radius*