

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?

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

12. Circle the atom in each pair that has the greater ionization energy.

- a) Li Be b) Na K c) Cl Si
d) Ca Ba e) P Ar f) Li K

13. Define electronegativity

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

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

16. 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

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19. What trend in electron affinity do you see as you go down a group/family on the periodic table? What causes this trend?

20. What trend in electron affinity do you see as you go across a period/row on the periodic table? What causes this trend?