Chemistry Name _____ Period _____

Periodic Trends Review Worksheet

1. For each of the following sets of atoms, rank the atoms from smallest to largest atomic radius.

a.) Li, C, F ___ < ___ < ___

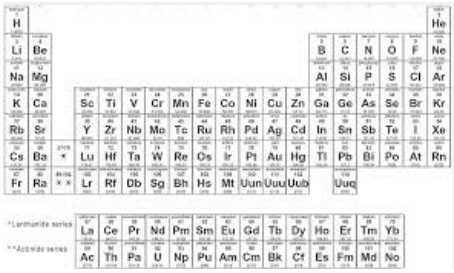
b.) Li, Na, K ___ < ___ < ___

c.) Ge, P, O ___ < ___ < ___

d.) C, N, Al ___ < ___ < ___

e.) Al, Cl, Ga ___ < ___ < ___

Draw arrows to show the trend for the direction of increasing Atomic Radii.



- What two properties control the size of the atom? _____

_____

- Which is the largest atom? _____ Which is the smallest atom? _____

2. For each of the following sets of ions and atoms circle which is larger.

a.) Mg^{+2} or Mg Mg^{+2} Mg

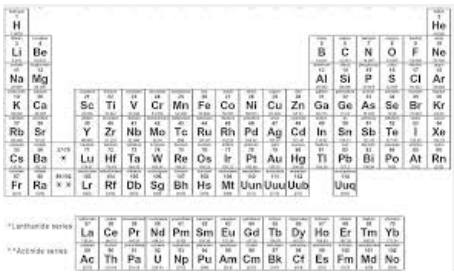
b.) N^{-3} or N N^{-3} N

c.) K^{+1} or Fr^{+1} K^{+1} Fr^{+1}

d.) O^{-2} or N^{-3} O^{-2} N^{-3}

e.) F^{-1} or F F^{-1} F

Draw arrows to show the trend for the direction of increasing Ionic Radii.



- Why are ions larger or smaller than their original atoms? _____

_____

- Which is the largest cation? _____ Which is the smallest cation? _____

- Which is the largest anion? _____ Which is the smallest anion? _____

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3. For each of the following sets of atoms, rank them from lowest to highest ionization energy.

a.) Mg, Si, S ___ < ___ < ___

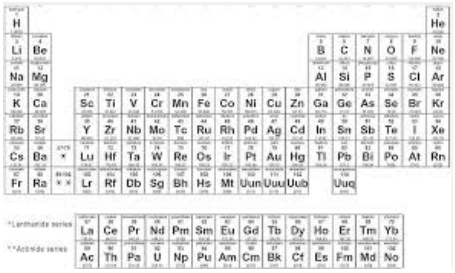
b.) Mg, Ca, Ba ___ < ___ < ___

c.) F, Cl, Br ___ < ___ < ___

d.) Ca, Cu, Kr ___ < ___ < ___

e.) C, Si, Sn ___ < ___ < ___

Draw arrows to show the trend for the direction of increasing Ionization Energy.



- What does Ionization Energy measure? _____

_____

- Which element has the lowest IE? _____ Which has the highest IE? _____

4. For each of the following sets of atoms, rank them from lowest to highest electronegativity.

a.) Li, C, N ___ < ___ < ___

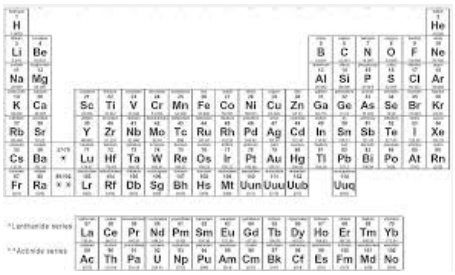
b.) C, O, Ne ___ < ___ < ___

c.) C, Si, Pb ___ < ___ < ___

d.) Cs, Ni, F ___ < ___ < ___

e.) S, F, He ___ < ___ < ___

Draw arrows to show the trend for the direction of increasing Electronegativity.



- Why are metals less electronegative than nonmetals? _____

_____

- Which element has the lowest EN? _____ Which has the highest EN? _____

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5. For each of the following sets of atoms, rank them from least to greatest in terms of metallic properties.

a.) Li, B, N ___ < ___ < ___

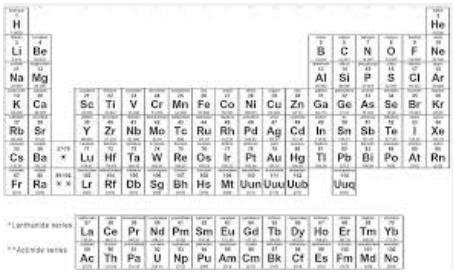
b.) Li, Na, K ___ < ___ < ___

c.) Si, P, S ___ < ___ < ___

d.) Pb, Po, Rn ___ < ___ < ___

e.) Ra, Sr, Mg ___ < ___ < ___

Draw arrows to show the trend for the direction of increasing Metallic Properties



- What are some properties of metals? _____

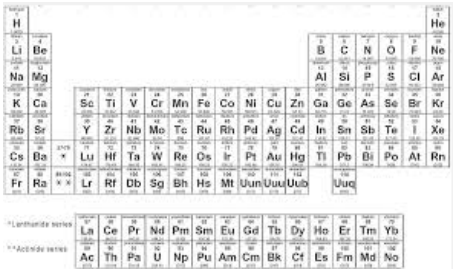
_____

- Which element is least metallic? ____ Which is most metallic? _____

6. Indicate greater than, less than, or equal to in order to compare the shielding effect of the following atoms.

a.) Li, B, N	**Li**	**B**	**N**
b.) Li, Na, K	**Li**	**Na**	**K**
c.) Si, P, S	**Si**	**P**	**S**
d.) Cu, Ag, Au	**Cu**	**Ag**	**Au**
e.) Ra, Sr, Mg	**Ra**	**Sr**	**Mg**

Draw arrows to show the trend for the direction of increasing Shielding Effect



- Why is shielding constant across a period? _____
- Why does shielding increase down a group? _____
- Which elements have the most shielding? _____
- Which elements have the least shielding? _____

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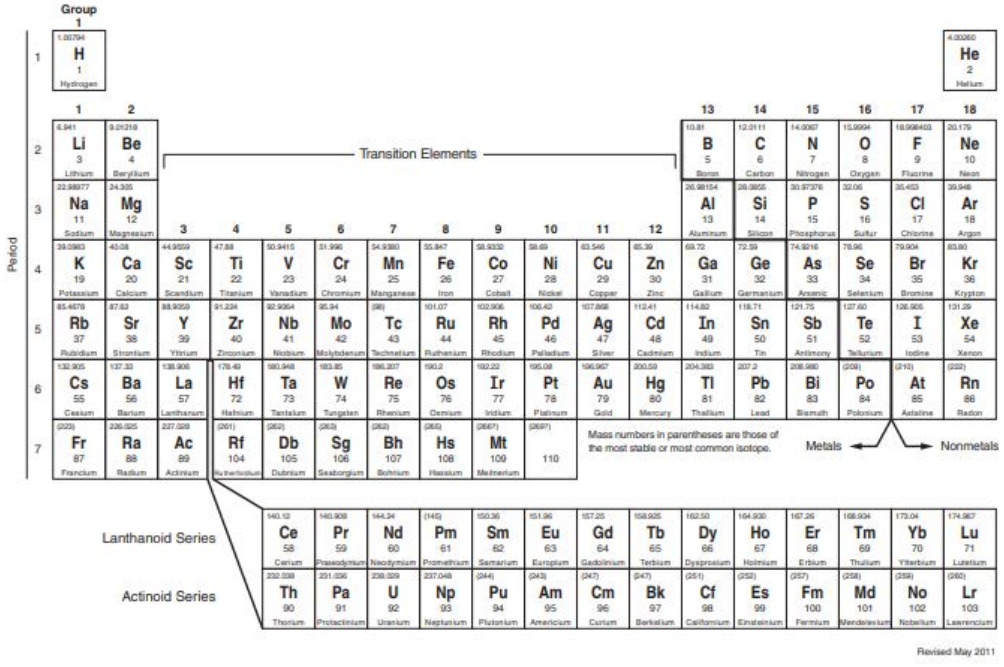
7. What determines an elements chemical properties? _____

8. List the number of valence electrons above each group for the **s** and **p block** elements.



9. **List the names for the following groups:**

- **Group 1** _____
- **Group 2** _____
- **Group 17** _____
- **Group 18** _____

10. **List examples of chemical changes:** _____

_____

11. **Define Ionic Bonding:** _____

12. **Define Covalent Bonding:** _____