

Name: \_\_\_\_\_

**Periodic Trends problems**

Period: \_\_\_\_\_

1.) You are given 6 pairs of elements. Use the shortcut method we learned about in the notes to determine which has the **largest effective nuclear charge**. You must show your work to get credit for these problems!

A. Pair 1: Na, Mg

B. Pair 2: Be, Ra

C. Pair 3: N, S

D. Pair 4: O, F

E. Pair 5: Cl, At

F. Pair 6: K, Sr

2.) You are given 6 pairs of elements. Determine which element from each pair has the **largest atomic radius**. Justify your answer. You must use the words like attraction, repulsion and energy levels in your justification statement. Also, draw the electron configuration for each element and reference it in your justification statement.

A. Pair 1: Ca, Be

B. Pair 2: F, O

C. Pair 3: Ti, Mn

D. Pair 4: As, Se

E. Pair 5: Fr, F

F. Pair 6: Ga, In

3.) You are given 6 pairs of elements. Determine which element from each pair has the **largest ionic radius**. Justify your answer. You must use the words like attraction, repulsion and energy levels in your justification statement. Also, draw the electron configuration for each element and reference it in your justification statement.

A. Pair 1: Rb, Rb<sup>+1</sup>B. Pair 2: Sr, Sr<sup>+2</sup>C. Pair 3: Al, Al<sup>+3</sup>D. Pair 4: P, P<sup>-3</sup>E. Pair 5: S, S<sup>-2</sup>F. Pair 6: F, F<sup>-1</sup>

4.) You are given 6 pairs of elements. Determine which element from each pair has the **largest ionization energy**. Justify your answer. You must use the words attraction, repulsion and energy levels in your justification statement. Also, draw the electron configuration for each element and reference it in your justification statement.

A. Pair 1: Zn, F

B. Pair 2: F, O

C. Pair 3: Sr, Al

D. Pair 4: Cl, Br

E. Pair 5: N, P

F. Pair 6: B, C

5.) You are given 6 pairs of elements. Determine which element from each pair has the **largest electronegativity**. Justify your answer. You must use the words attraction, repulsion and energy levels in your justification statement. Also, draw the electron configuration for each element and reference it in your justification statement.

A. Pair 1: K, F

B. Pair 2: Mg, Al

C. Pair 3: F, I

D. Pair 4: S, Cl

E. Pair 5: Se, Br

F. Pair 6: Li, Sr