Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period: \_\_\_\_

**WS Atomic & Ionic Radii from Notes Part 3 on the Periodic Table**

**Atomic Size**

1. As you go down a group, atomic radius gets \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

This happens because \_**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

### \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

### As you go right across a period, atomic radius gets \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

### This happens because \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

### \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

### 2. Which of the following elements has a larger atomic radius? (*circle one*)

a) fluorine or bromine

b) sodium or magnesium

c) potassium or strontium

3. Write the ***name*** of the element with the largest atom in each of the following groups.

a) F, Cl, Br \_\_\_\_\_\_\_\_\_\_\_

b) N, O, F \_\_\_\_\_\_\_\_\_\_\_

c) C, N, P, S \_\_\_\_\_\_\_\_\_\_\_

4. Write the ***symbols*** of the elements in order of ***increasing*** atomic size. (*smallest to largest*)

a) oxygen, aluminum, magnesium \_\_\_\_<\_\_\_\_<\_\_\_\_

b) strontium, tin, iron \_\_\_\_<\_\_\_\_<\_\_\_\_

c) calcium, potassium, carbon \_\_\_\_<\_\_\_\_<\_\_\_\_

### 5. Write the *symbols* of the elements in order of *decreasing* atomic size. (*largest to smallest*).

a) Na, K, Cl \_\_\_\_>\_\_\_\_>\_\_\_\_

b) C, Ge, Sn \_\_\_\_>\_\_\_\_>\_\_\_\_

c) Al, C, B \_\_\_\_>\_\_\_\_>\_\_\_\_

d) Ba, Zn, O \_\_\_\_>\_\_\_\_>\_\_\_\_

### Ions & Ionic Size

### 7. What is an ion? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

### 8. Metals lose/gain electrons to form positive \_\_\_\_\_\_\_\_\_.

### 9. Nonmetals lose/gain electrons to form negative \_\_\_\_\_\_\_\_\_.

### 10. Positive cations are larger/smaller than the neutral atoms from which they formed because

### \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

### Negative anions are larger/smaller than the neutral atoms from which they formed because

### \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

### 11. Circle the element or ion that is larger.

a) K or K+1

b) S or S–2

c) Ca or Ca+2

### 12. Circle the element or ion that is smaller.

a) Cl or Cl–1

b) Mg or Mg+2

c) Al or Al+3

13. In the following picture, A is an element and B is an ion of the same element.

Is the ion B a positive or negative ion of atom A? \_\_\_\_\_\_\_\_\_\_\_\_

**A**

**B**

### 

### Explain your answer.

### \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

### \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_