

**Chapter 7, Worksheet 2**  
**AP Chem, Periodic Properties of Elements**

Name \_\_\_\_\_  
Period \_\_\_\_\_

- As a general rule, the size of atoms increases as you move to the (left/right) or (up/down) on the periodic table. What part of this generalization is counter-intuitive?
- Predict the atom in each of the following pairs with the larger radius.
  - Be or Mg
  - C or N
  - Se or Cl
  - Ba or Y
  - Mg or Sc
  - Te or I
- As a general rule, metals that are (farther from/closer to) the boundary between metals and nonmetals have more "metallic character", and nonmetals that are (farther from/closer to) the boundary have more "nonmetallic character".
- Predict the element with more metallic character.
  - Cs or Sr
  - Al or Mg
  - Rb or K
  - Rb or Ba
- Predict the element with more nonmetallic character.
  - N or O
  - S or Se
  - As or F
  - B or Si
- As a general rule, (metal/nonmetal) ions are larger than (metal/nonmetal) ions.
- As general rule, metal atoms are (larger/smaller) than their (+) ions, and nonmetal atoms are (larger/smaller) than their (-) ions.
- In general, the size of either positively charged or negatively charged ions increases as you move to the (left/right) or (up/down) on the periodic table.
- Predict the larger of each of these pairs of atoms or ions.
  - Mg or  $\text{Mg}^{+2}$
  - Br or  $\text{Br}^-$
  - K or  $\text{K}^+$
  - $\text{Na}^+$  or  $\text{Mg}^{+2}$
  - $\text{Na}^+$  or  $\text{F}^-$
  - $\text{Sr}^{+2}$  or  $\text{Ba}^{+2}$
  - $\text{Mg}^{+2}$  or  $\text{Al}^{+3}$
  - I or  $\text{I}^-$
  - $\text{F}^-$  or  $\text{Cl}^-$
  - $\text{Al}^{+3}$  or  $\text{P}^{-3}$
- As a general rule, first ionization energy (the energy needed to remove the first electron from a neutral gaseous atom) increases as you move to the (left/right) and (up/down) on the periodic table.