

**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  $Mg^{+2}$
  - Br or  $Br^-$
  - K or  $K^+$
  - $Na^+$  or  $Mg^{+2}$
  - $Na^+$  or  $F^-$
  - $Sr^{+2}$  or  $Ba^{+2}$
  - $Mg^{+2}$  or  $Al^{+3}$
  - I or  $I^-$
  - $F^-$  or  $Cl^-$
  - $Al^{+3}$  or  $P^{-3}$
- 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.