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.

a) Be or Mg b) C or N c) Se or Cl

d) Balor Y

e) Mg or Sc f) Te or I

3. 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 (further from/closer to) the boundary have more "nonmetallic character".

4. Predict the element with more metallic character.

a) Cs or Sr

b) Al or Mg

c) Rb or K

d) Rb or Ba.

Predict the element with more nonmetallic character.

a) N or O

b) S or Se c) As or F

d) 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.

8. 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.

a) Mg or Mg⁺² b) Br or Br c) K or K⁺ d) Na⁺ or Mg⁺²

e) Na⁺ or F⁻ f) Sr⁺² or Ba⁺² g) Mg⁺² or Al⁺³ h) I or I⁻

i) F or Cl⁻
i) 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.

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