

- An ion of which element has a larger radius than an atom of the same element?  
A) aluminum      B) chlorine  
C) magnesium      D) sodium
- When an atom of phosphorus becomes a phosphide ion ( $P^{3-}$ ), the radius  
A) decreases      B) increases  
C) remains the same
- Which element forms an ion that is larger than its atom?  
A) aluminum      B) chlorine  
C) magnesium      D) sodium
- For which element is the ionic radius larger than the atomic radius?  
A) Na    B) Mg    C) Al    D) Cl
- An atom with the electron configuration 2-8-2 would most likely  
A) decrease in size as it forms a positive ion  
B) increase in size as it forms a positive ion  
C) decrease in size as it forms a negative ion  
D) increase in size as it forms a negative ion
- How does the size of a barium ion compare to the size of a barium atom?  
A) The ion is smaller because it has fewer electrons.  
B) The ion is smaller because it has more electrons.  
C) The ion is larger because it has fewer electrons.  
D) The ion is larger because it has more electrons.
- Which element forms an ion larger than its atom?  
A) Na    B) Ne    C) Ba    D) Br
- Which ion has the largest radius?  
A)  $I^-$     B)  $Cl^-$     C)  $Br^-$     D)  $F^-$
- The atom of which element has an ionic radius smaller than its atomic radius?  
A) N    B) S    C) Br    D) Rb
- Which ion would have the *smallest* radius?  
A)  $Ba^{2+}$     B)  $Ca^{2+}$     C)  $Mg^{2+}$     D)  $Sr^{2+}$
- When an atom of bromine forms a bromide ion, the radius  
A) decreases      B) increases  
C) remains the same
- An ion of which element is smaller than its atom?  
A) F    B) O    C) Cl    D) Na
- Which atom forms an ion with the largest radius?  
A) I    B) Br    C) Cl    D) F
- A chloride ion *differs* from a chlorine atom in that the chloride ion has  
A) more protons      B) fewer protons  
C) a larger radius      D) a smaller radius
- Which particle has the largest radius?  
A) Cu    B)  $Cu^{2+}$     C) Se    D)  $Se^{2-}$
- As a sulfur atom gains electrons, its radius  
A) decreases      B) increases  
C) remains the same
- The radius of a  $Li^+$  ion is approximately 100 pm. The radius of a Na atom is 190 pm. From this information, what would be the most likely radius of a  $Na^+$  ion?  
A) less than 100 pm  
B) greater than 100 pm but less than 190 pm  
C) 190 pm  
D) greater than 190 pm
- Which element's ionic radius is smaller than its atomic radius?  
A) neon      B) nitrogen  
C) sodium      D) sulfur
- When a fluorine atom becomes an ion, it will  
A) gain an electron and decrease in size  
B) gain an electron and increase in size  
C) lose an electron and decrease in size  
D) lose an electron and increase in size
- Which of the following particles has the smallest radius?  
A)  $Na^0$     B)  $K^0$     C)  $Na^+$     D)  $K^+$