

Periodic Trends Worksheet

- Which statement best describes Group 2 elements as they are considered in order from top to bottom of the Periodic Table?
 - The number of principal energy levels increases, and the number of valence electrons increases.
 - The number of principal energy levels increases, and the number of valence electrons remains the same.
 - The number of principal energy levels remains the same, and the number of valence electrons increases.
 - The number of principal energy levels remains the same, and the number of valence electrons decreases.
- The elements calcium and strontium have similar chemical properties because they both have the same
 - atomic number
 - mass number
 - number of valence electrons
 - number of completely filled sublevels
- Which of the following atoms has the largest atomic radius?

(A) Na	(B) Mg	(C) K	(D) Ca
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- Which noble gas has the highest first ionization energy?

(A) radon	(B) neon	(C) krypton	(D) helium
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- Which sequence of elements is arranged in order of decreasing electronegativity?

(A) Al, Si, P	(C) Li, Na, K
(B) Cl, Br, I	(D) N, C, B
- Which list of elements from Group 2 on the Periodic Table is arranged in order of increasing atomic radius?

(A) Be, Mg, Ca	(C) Ca, Mg, Be
(B) Ba, Ra, Sr	(D) Sr, Ra, Ba
- The strength of an atom's attraction for the electrons in a chemical bond is the atom's

(A) electronegativity	(C) ionization energy
(B) heat of reaction	(D) heat of formation
- Which properties are most common in nonmetals?
 - low ionization energy and low electronegativity
 - low ionization energy and high electronegativity
 - high ionization energy and low electronegativity
 - high ionization energy and high electronegativity
- The Group 17 element with the highest electronegativity is

(A) fluorine	(C) chlorine	(D) iodine
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- Which diagram correctly shows the relationship between electronegativity and atomic number for the elements of Period 3?

(A)

(B)

(C)

(D)

Name _____ Date _____ Period _____

THE REST OF THE QUESTIONS ARE NOT MULTIPLE CHOICE!!!

11. Indicate whether the following properties increase or decrease from left to right across the periodic table.
- (A) atomic radius
 - (B) first ionization energy
 - (C) electronegativity
12. Circle the atom in each pair that has the largest atomic radius.
- (A) Al or B
 - (B) Na or Al
 - (C) S or O
 - (D) O or F
 - (E) Br or Cl
 - (F) Mg or Ca
13. In each of the following pairs, circle the species with the *larger* ionic radius:
- (A) Mg or Mg^{+2}
 - (B) S or S^{-2}
 - (C) Cu^{+2} or Cu
 - (D) C^{-4} or C or C^{+4}
14. Name the element:
- (A) In period 2 with the highest ionization energy
 - (B) The alkali metal with the lowest atomic radius
 - (C) In period 4 with the lowest electronegativity
 - (D) In group 16 with the lowest ionization energy
 - (E) The halogen with the largest atomic radius
 - (F) The largest radius on the periodic table
 - (G) The largest electronegativity on the periodic table