			Name
	Worksheet	: Periodic Trends	Period
1. Which statement best describes Group 2 elements as		11. Which sequence of elements is arranged in order of	
they are considered in order from top to bottom of the		decreasing atomic radii?	
Periodic Table?		(A) Al, Si, P	(C) Cl, Br, I
(A) The number of principal energy levels increases, and the number of valence electrons increases.		(B) Li, Na, K	(D) N, C, B
(B) The number of principal energy levels increases, and the number of valence electrons remains the same.		12. Which list of elements from Group 2 on the Periodic Table is arranged in order of increasing atomic radius?	
(C) The number of principal energy levels remains the		(A) Be, Mg, Ca	(C) Ba, Ra, Sr
same, and the number of valence electrons increases.			(D) Sr, Ra, Ba
(D) The number of principal energy levels remains the		(B) Ca, Mg, Be	
same, and the number of valence electrons decreases.		13. As each successive element in Group 15 of the	
2. What is the total number of valence electrons in an		Periodic Table is considered in order of increasing atomic number, the atomic radius	
atom of boron in the groun		(A) decreases	(C) remains the same
(A) 1	(C) 3	1	(C) remains the same
(B) 7	(D) 5	(B) increases	
3. What is the total number of valence electrons in an		14. The strength of an atom's attraction for the electrons in a chemical bond is the atom's	
atom of xenon, Xe?		(A) electronegativity	(C) heat of reaction
(A) 0	(C) 8	(B) ionization energy	(D) heat of formation
(B) 2	(D) 18		
4. The elements calcium and strontium have similar		15. Which properties are most common in nonmetals?	
chemical properties because they both have the same		(A) low ionization energy and low electronegativity	
(A) atomic number		 (B) low ionization energy and high electronegativity (C) high ionization energy and low electronegativity 	
(B) mass number		(D) high ionization energy and low electronegativity	
(C) number of valence electrons		(D) high ionization energy	and high electronegativity
(D) number of completely filled sublevels		16. Which Group 17 element has the least attraction for electrons?	
5. On the Periodic Table of the Elements, all the		10 100 APE 2 01 200 ADDE 1115 - 51	(C) Br
elements within Group 16	have the same number of	(A) F	(D) I
(A) valence electrons	(C) protons	(B) Cl	(B) 1
(B) energy levels	(D) neutrons	17. Which element in Group 16 has the greatest tendency	
6. An element with a partially filled d sublevel in the		to gain electrons?	(C) 8
ground state is classified as		(A) Te	(C) S
(A) a halogen	(C) an alkali metal	(B) Se	(D) O
(B) a transition metal	(D) an alkaline earth metal	18. The Group 17 element with the highest electronegativity is	
7. Which electron config	uration represents a transition	(A) fluorine	(C) bromine
element?	4	(B) chlorine	(D) iodine
(A) $1s^2 2s^2 2p^5$	(C) $[Ar]3d^54s^2$	(B) chlorine	(D) localic
(B) $[Ne]3s^2$	(D) $[Ar]3d^{10}4s^24p^6$	19. As the elements of Group 1 on the Periodic Table are	
8. Which element in Period 5 of the Periodic Table is a		considered in order of increasing atomic radius, the ionization energy of each successive element generally	
transition element?		(A) decreases	(C) remains the same
(A) Sr	(C) Ag	(B) increases	
(B) Sb	(D) Xe	(D) mercases	
9. Which of the following atoms has the largest atomic		20. The amount of energy required to remove the outermost electron from a gaseous atom in the ground state	
radius?	(C) Ma	is known as	(0)
(A) Na	(C) Mg	(A) first ionization energy	(C) conductivity
(B) K	(D) Ca	(B) activation energy	(D) electronegativity
10. Which noble gas has the highest first ionization energy?		21. Which element is a member of the halogen family?	
(A) radon	(C) neon	(A) K	(C) I
(B) krypton	(D) helium	(B) B	(D) S

lowest first ionization energy? (A) Be (C) Ca (D) Ba (B) Mg 23. As elements of Group 1 of the Periodic Table are considered in order from top to bottom, the ionization energy of each successive element decreases. This decrease is due to (A) decreasing radius and decreasing shielding effect (B) decreasing radius and increasing shielding effect (C) increasing radius and decreasing shielding effect (D) increasing radius and increasing shielding effect 24. Which sequence correctly places the elements in order of increasing ionization energy? (A) $H \rightarrow Li \rightarrow Na \rightarrow K$ (C) $O \rightarrow S \rightarrow Se \rightarrow Te$ (D) $H \rightarrow Be \rightarrow Al \rightarrow Ga$ (B) $I \rightarrow Br \rightarrow Cl \rightarrow F$ 25. Compared to the atomic radius of a sodium atom, the atomic radius of a magnesium atom is smaller. The smaller radius is primarily a result of the magnesium atom having (A) a larger nuclear charge (B) a smaller nuclear charge (C) more principal energy levels (D) fewer principal energy levels 26. Which of these elements has the least attraction for electrons in a chemical bond? (C) nitrogen (A) oxygen (D) chlorine (B) fluorine 27. The ability of carbon to attract electrons is (A) greater than that of nitrogen, but less than that of (B) less than that of nitrogen, but greater than that of (C) greater than that of nitrogen and oxygen (D) less than that of nitrogen and oxygen 28. As the elements Li to F in Period 2 of the Periodic

Table are considered in succession, how do the relative electronegativity and the covalent radius of each successive

(A) The relative electronegativity decreases, and the atomic

(B) The relative electronegativity decreases, and the atomic

(C) The relative electronegativity increases, and the atomic

(D) The relative electronegativity increases, and the atomic

element compare?

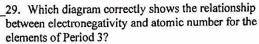
radius decreases.

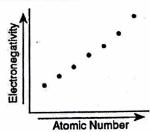
radius increases.

radius decreases.

radius increases.

22. Which of the following Group 2 elements has the





(A)

