

Name: _____ Period: _____ Date: _____

Chapter 5: Periodic Trends Test Review

Use the periodic table and your knowledge of periodic trends to answer the following questions.

- Which atom in each pair has the larger atomic radius?
a) Li or K b) Ca or Ni c) Ga or B d) O or C e) Cl or Br
f) Be or Ba g) Si or S h) Fe or Au
- What is the periodic trend for atomic size from top to bottom in a group?
from left to right in a period?
- Why do atoms get smaller as you move left to right in a period?
- Which element in each pair has a larger ionization energy? (Which of the pair would require MORE energy to remove an electron?)
a) Na or O b) Be or Ba c) Ar or F d) Cu or Ra e) I or Ne
f) K or V g) Ca or Fr h) W or Se
- Explain the relationship between the relative size of an ion to its neutral atom and the charge on the ions.
- Which particle has the larger radius in each atom/ion pair?
a) Na, Na⁺ b) S, S²⁻ c) I, I⁻ d) Al, Al³⁺
- What is ionization energy? What is first ionization energy?
- What is the periodic trend for first ionization energy?
- Arrange the following groups of elements in order of increasing ionization energy.
a) Be, Mg, Sr b) Bi, Cs, Ba c) Na, Al, S
- Which element in each pair has a higher electronegativity value?
a) Cl, F b) C, N c) Mg, Ca d) As, Ca
- What is the periodic trend for electronegativity?
- The principle that states that the physical and chemical properties of the elements are periodic functions of their atomic numbers is known as the _____ law.

13. Elements in the same (circle one-**period** or **group**) can be expected to have similar properties.
14. Mendeleev arranged the periodic table in order of increasing atomic _____.
15. Mendeleev predicted that blank spaces in his periodic table represented undiscovered _____.
16. Who arranged the periodic table according to increasing atomic number?

17. Vertical columns on the periodic table are called _____.
18. Horizontal rows on the periodic table are called _____.
19. Group 17 is known as the _____.
20. Elements on the periodic table with atomic numbers 58-71 are called the _____.
21. An element whose noble gas configuration is $[\text{Ne}]3s^23p^1$ can be found in which period? _____ group? _____ Identify the element: _____.
22. Elements that border the stair-step or zigzag line on the periodic table are known as the _____.
23. The most characteristic property of noble gases is that they are (circle one-**mostly unreactive** or **mostly reactive**).
24. The energy required to remove an electron from an atom is the atom's _____.
25. A measure of the ability of an atom in a compound to attract electrons is called _____.
26. Group 1 metals are known as the _____ metals.
27. Group 2 metals are known as the _____ metals.
28. Valence electrons are the electrons located in the (circle one-**lowest** or **highest**) energy level.