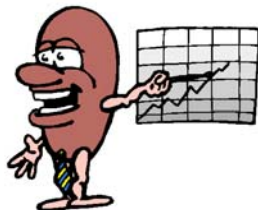


## What are the Trends in the Periodic Table?

Below is a portion of the periodic table. In the answer spaces provided in the table, fill in the [1] atomic number, [2] atomic radius, [3] number of shells, and [4] number of outer shell electrons as indicated in the key below. Then, answer the questions that follow.



### KEY

#### Symbol

- [1] Atomic Number ..... \_\_\_\_\_
- [2] Atomic Radius ..... \_\_\_\_\_
- [3] Number of Shells ..... \_\_\_\_\_
- [4] Number of Outer Electrons ..... \_\_\_\_\_

<b>H</b> [1] _____ [2] _____ [3] _____ [4] _____							<b>He</b> [1] _____ [2] _____ [3] _____ [4] _____
<b>Li</b> [1] _____ [2] _____ [3] _____ [4] _____	<b>Be</b> [1] _____ [2] _____ [3] _____ [4] _____	<b>B</b> [1] _____ [2] _____ [3] _____ [4] _____	<b>C</b> [1] _____ [2] _____ [3] _____ [4] _____	<b>N</b> [1] _____ [2] _____ [3] _____ [4] _____	<b>O</b> [1] _____ [2] _____ [3] _____ [4] _____	<b>F</b> [1] _____ [2] _____ [3] _____ [4] _____	<b>Ne</b> [1] _____ [2] _____ [3] _____ [4] _____
<b>Na</b> [1] _____ [2] _____ [3] _____ [4] _____	<b>Mg</b> [1] _____ [2] _____ [3] _____ [4] _____	<b>Al</b> [1] _____ [2] _____ [3] _____ [4] _____	<b>Si</b> [1] _____ [2] _____ [3] _____ [4] _____	<b>P</b> [1] _____ [2] _____ [3] _____ [4] _____	<b>S</b> [1] _____ [2] _____ [3] _____ [4] _____	<b>Cl</b> [1] _____ [2] _____ [3] _____ [4] _____	<b>Ar</b> [1] _____ [2] _____ [3] _____ [4] _____
<b>K</b> [1] _____ [2] _____ [3] _____ [4] _____	<b>Ca</b> [1] _____ [2] _____ [3] _____ [4] _____						

---

Answer the questions below by referring to the data on the table you filled in on the first page.

1. As you go from left to right across a row of the *Periodic Table*:
  - a. What happens to the atomic number and the number of protons? \_\_\_\_\_
  - b. As a result, what happens to the pull on the electrons? \_\_\_\_\_
  - c. Therefore what happens to the atomic radius? \_\_\_\_\_
  - d. Finally, what does this mean about the likelihood of losing electrons? Do the elements become more or less metallic? \_\_\_\_\_
2. As you go from top to bottom down a column of the *Periodic Table*:
  - a. What happens to the number of shells? \_\_\_\_\_
  - b. As a result, what happens to the atomic radius? \_\_\_\_\_
  - c. Therefore, what happens to the pull on the electrons? \_\_\_\_\_
  - d. Finally, what does this mean about the likelihood of losing electrons? Do the elements become more or less metallic? \_\_\_\_\_
3. Based on the analysis above, where do metals tend to be located on the *Periodic Table*? \_\_\_\_\_  
\_\_\_\_\_
4. Based on the analysis above, where do nonmetals tend to be located on the *Periodic Table*? \_\_\_\_\_  
\_\_\_\_\_
5. What do the elements at the extreme right of the *Periodic Table* have in common? What affect does this have on the chemical properties? \_\_\_\_\_  
\_\_\_\_\_
6. Where on the *Periodic Table*, approximately, is the border between the metals and nonmetals (the metalloids)? \_\_\_\_\_  
\_\_\_\_\_