Name _____

Grouping Elements Answer Key

1. The group number indicates the number of valence electrons an element has, while the period number represents the energy level (or electron shell) in which the valence electrons are found.

2. Transition metals are typically good conductors of heat and electricity, have high melting and boiling points, and exhibit various oxidation states.

3. Elements in the same group exhibit similar chemical reactivity because they have the same number of valence electrons.

4. Metalloids, also known as semimetals, have properties that are intermediate between metals and nonmetals. They can conduct electricity under certain conditions and are often used in semiconductors.

5. Electronegativity generally increases from left to right across a period due to increasing nuclear charge and decreasing atomic size.

6. Elements in the same period have the same number of energy levels, but the number of sublevels and electrons within them may vary.

7. The p-block elements include the noble gases (Group 18), halogens (Group 17), and chalcogens (Group 16), among others.

8. The lanthanides and actinides are series of elements that are located in the f-block of the periodic table. They are usually metals and many of them are radioactive.

9. Atomic radius generally increases as you move from top to bottom within a group due to the addition of new energy levels.

10. Ionization energy generally increases from left to right across a period due to increasing effective nuclear charge.