Periodic table summary of trends

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Key Terms for Chapter 7
- Valence orbitals-Orbits of electrons that are in the outer shell.
- Effective nuclear charge-net positive charge used by electrons in multiple electron atoms.
- Bonding atomic radius-the radius from the nucleus of one atom to the nucleus of an atom it is chemically bonded to.
- Isoelectric Series-a series of atoms, ions, or molecules having the same number of electrons.
- Ionization energy-the amount of energy required to remove an electron from an atom.
- Electron affinity-the energy that occurs when an electron is added and forms a anion.

Key term for chapter 7 (cont.)
- Metallic character-the extent to which a element exhibits the physical/chemical properties of a metal.
- Alkali metals-members of the first group on the periodic table.
- Alkali earth metals-members of the second group on the periodic table.
- Hydride ion-an ion formed by the addition of an electron to an element of hydrogen.
- Ozone-the name given to 03 an allotrope of oxygen
- Halogens- members of the seventh group on the periodic table
- Noble Gases- members of the eighth group on the periodic table.
Atomic Radius

- Spacing between two bonded atoms
- Increase as we go down
- Decrease as we go left to right

Ionization Energy

- Minimum energy needed to remove an electron from an atom in the gas phase
- Opposite of atomic radii-
- Decrease as we go down
- Increase as we go right

Electron Affinity

- Energy change upon adding an electron to the gas
- Negative is stable, positive means the anion is unstable relative to the separated atom
- More negative when we move to the right
Electronegativity

- Electronegativity is the ability of atom to compete for electrons.
- It decreases going down.
- It increases going right.

Key Concepts for Chapter 7

- Effective Nuclear Charge increases as we move left to right along the periodic table.
- Atomic radii increase as we move downward.
- Ionization Energies decrease as we move downward and increase as we move left to right.
- Electron Affinities move downward as we go left to right.
- Electronegativity increases while going down and increases while going right.