Trends in the Periodic Table Notes

What happens as you go **across a period** from left to right?

- _____
- _____

Therefore _____

_____

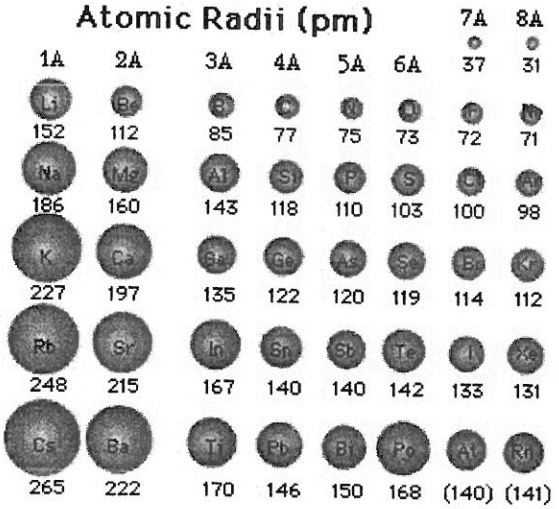
What happens as you go **down a group** from top to bottom?

- _____
- But more importantly _____

Therefore _____

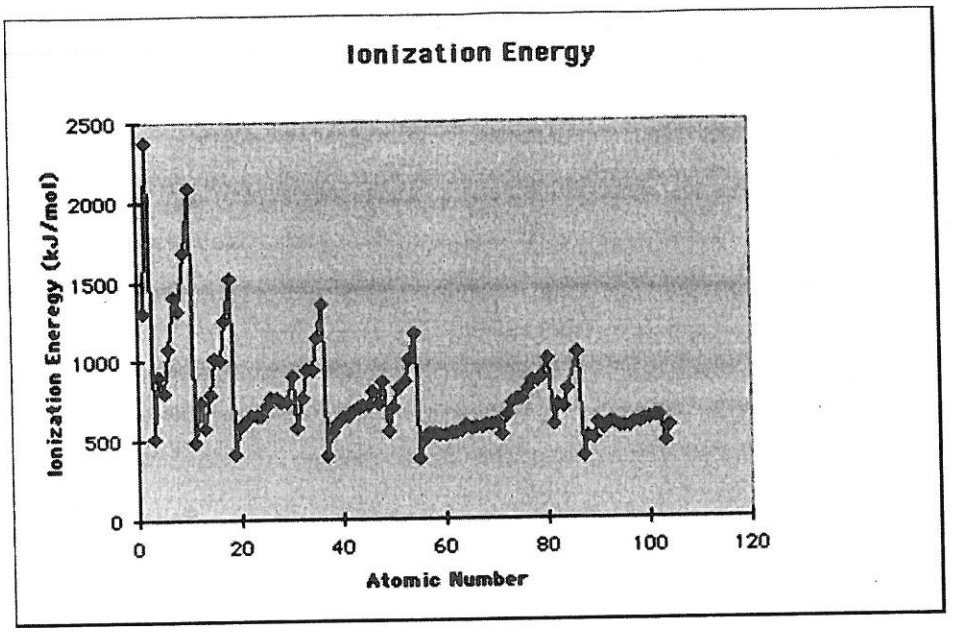
_____

Atomic Radius (size of the atom) **Trend**



Ionization Energy is the energy required to remove an electron from a gaseous atom or ion.

Trend



Electronegativity is a measure of the tendency of an atom to attract a bonding pair of electrons.

Trend

Pauling Electronegativity Values

H 2.1																	He
Li 1.0	Be 1.6											B 2.0	C 2.5	N 3.0	O 3.5	F 4.0	Ne
Na 0.9	Mg 1.3											Al 1.5	Si 1.9	P 2.2	S 2.6	Cl 3.0	Ar
K 0.8	Ca 1.0	Sc 1.4	Ti 1.5	V 1.6	Cr 1.7	Mn 1.5	Fe 1.8	Co 1.9	Ni 1.9	Cu 1.9	Zn 1.6	Ga 1.8	Ge 2.0	As 2.2	Se 2.6	Br 2.8	Kr
Rb 0.8	Sr 0.9	Y 1.2	Zr 1.3	Nb 1.6	Mo 2.2	Tc 1.9	Ru 2.2	Rh 2.3	Pd 2.2	Ag 1.9	Cd 1.7	In 1.8	Sn 2.0	Sb 2.1	Te 2.1	I 2.5	Xe

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The rules:

1. If the electronegativity difference (usually called ΔEN) is less than 0.5, then the bond is nonpolar **covalent**.
2. If the ΔEN is between 0.5 and 1.6, the bond is considered **polar covalent**.
3. If the ΔEN is greater than 2.0, then the bond is **ionic**.

Metallic Reactivity