

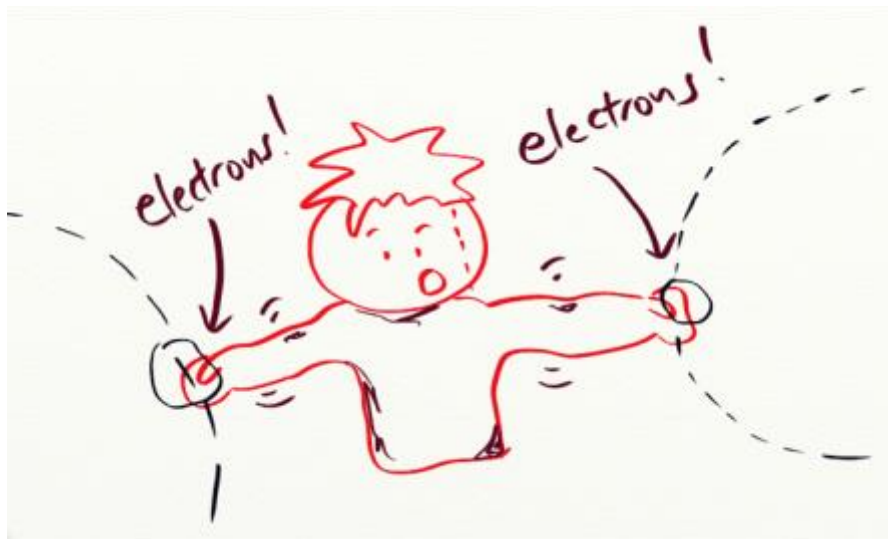
Periodic Trends

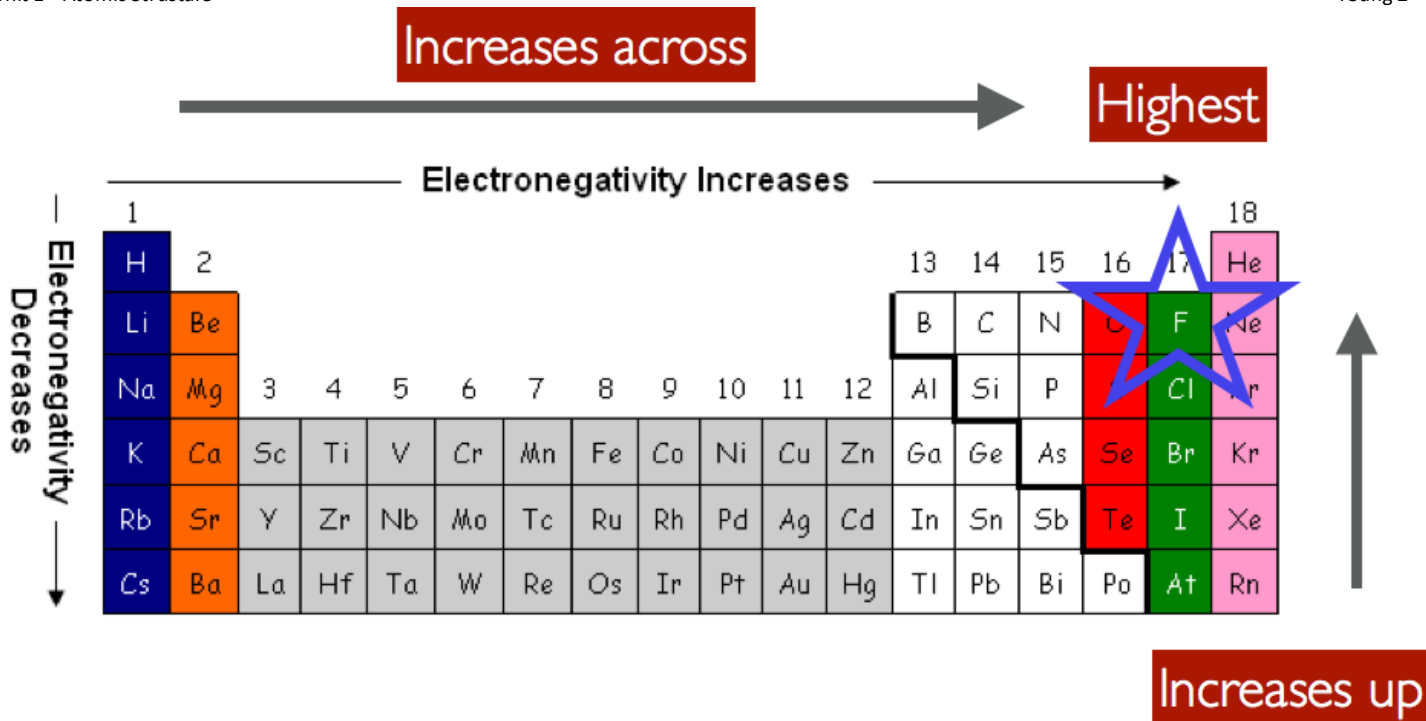
Based on how the elements are situated on the Periodic table, there are 3 trends that can be observed.

- 1.
- 2.
- 3.

Electronegativity

What is it?





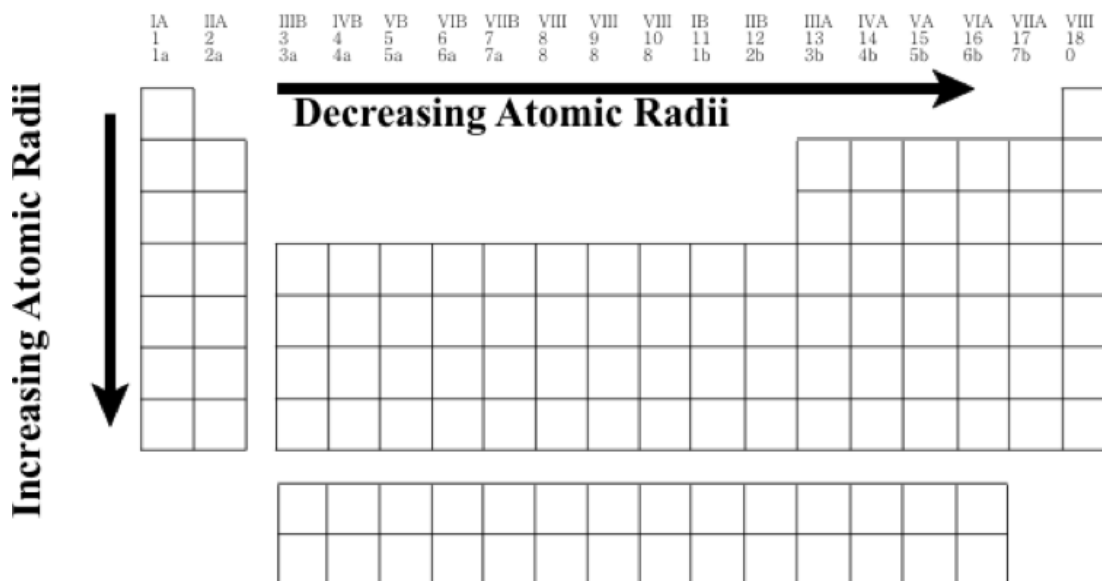
2nd Trend: Atomic Radius

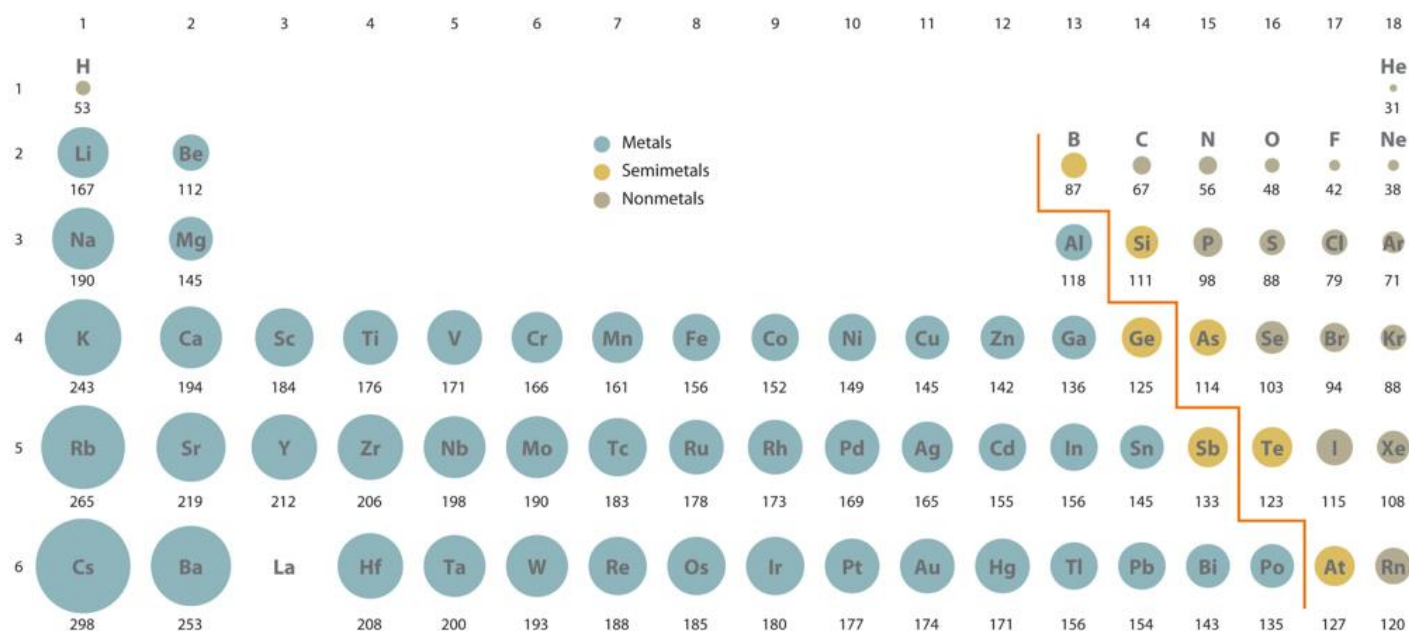
If we know Fluorine has the _____ electronegativity value, then it must hold the electrons _____ to the nucleus...

Fluorine would have a relatively _____ radius

We can reason that the trend would _____ across the _____

(opposite of the electronegativity trend)





What about the atomic radius of ions?

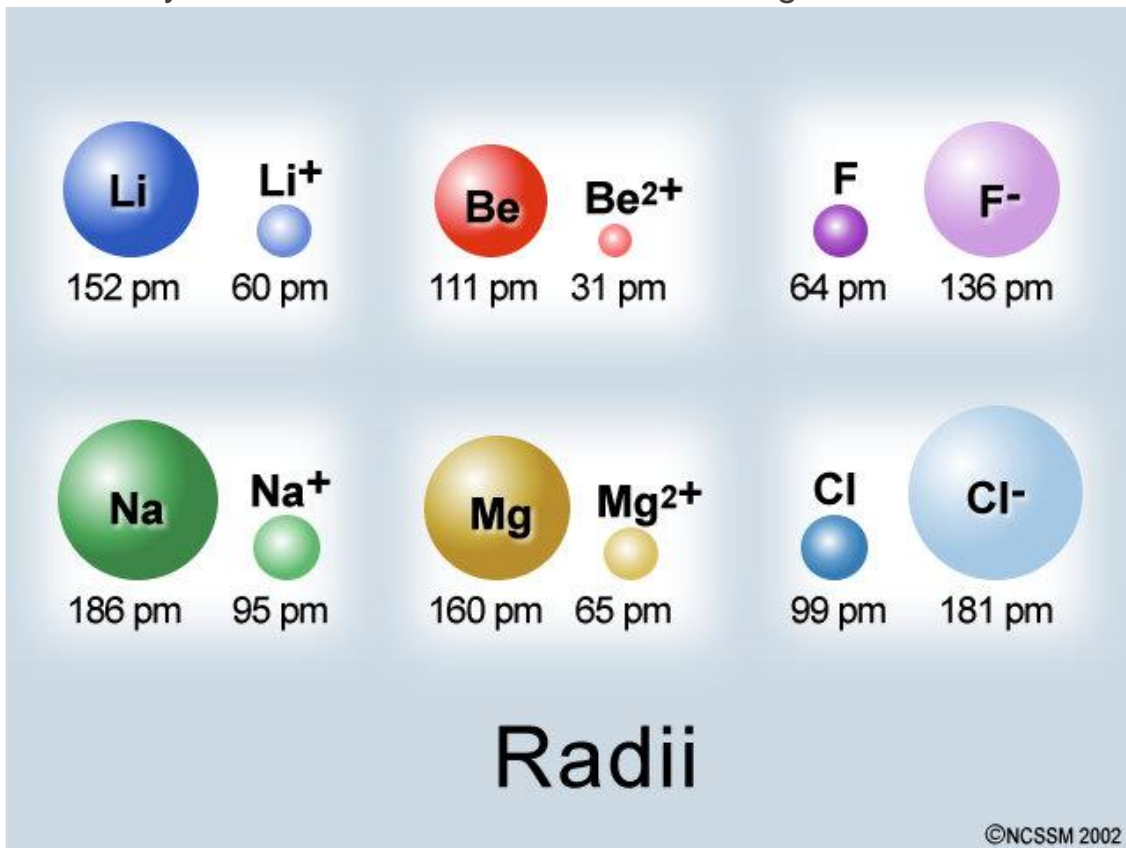
Which one would have a larger atomic radius?

Li or Li⁺?

Which one would have a larger atomic radius?

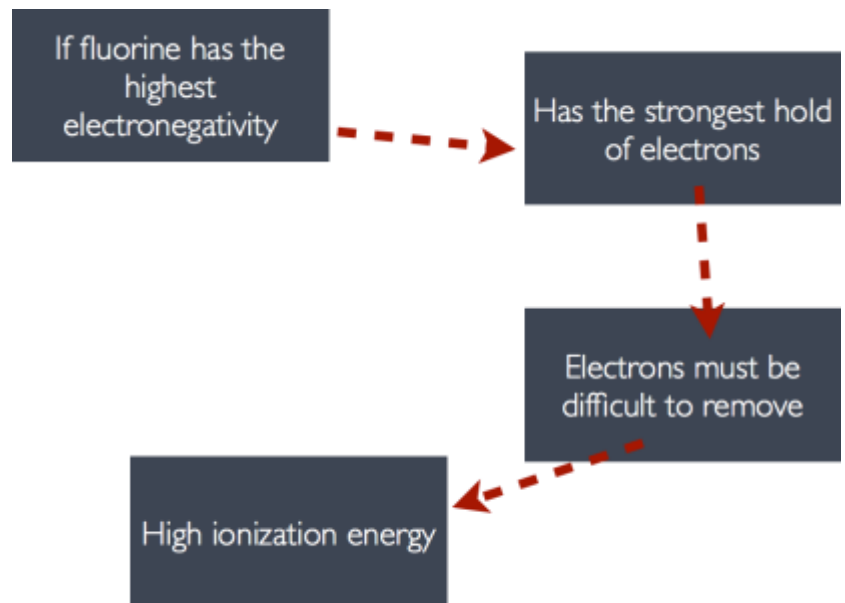
Cl or Cl⁻?

Try to understand instead of memorizing the trends!

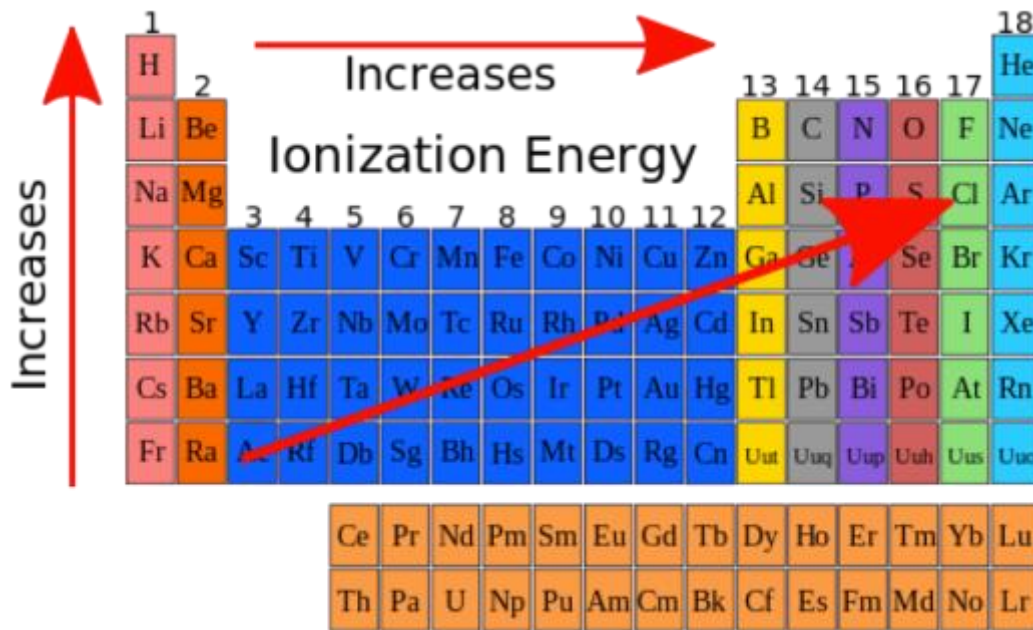


3rd Trend – Ionization Energy

What is it?



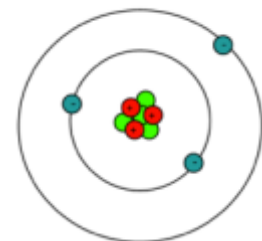
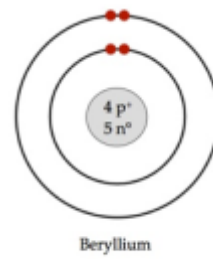
Ionization Energy Trend

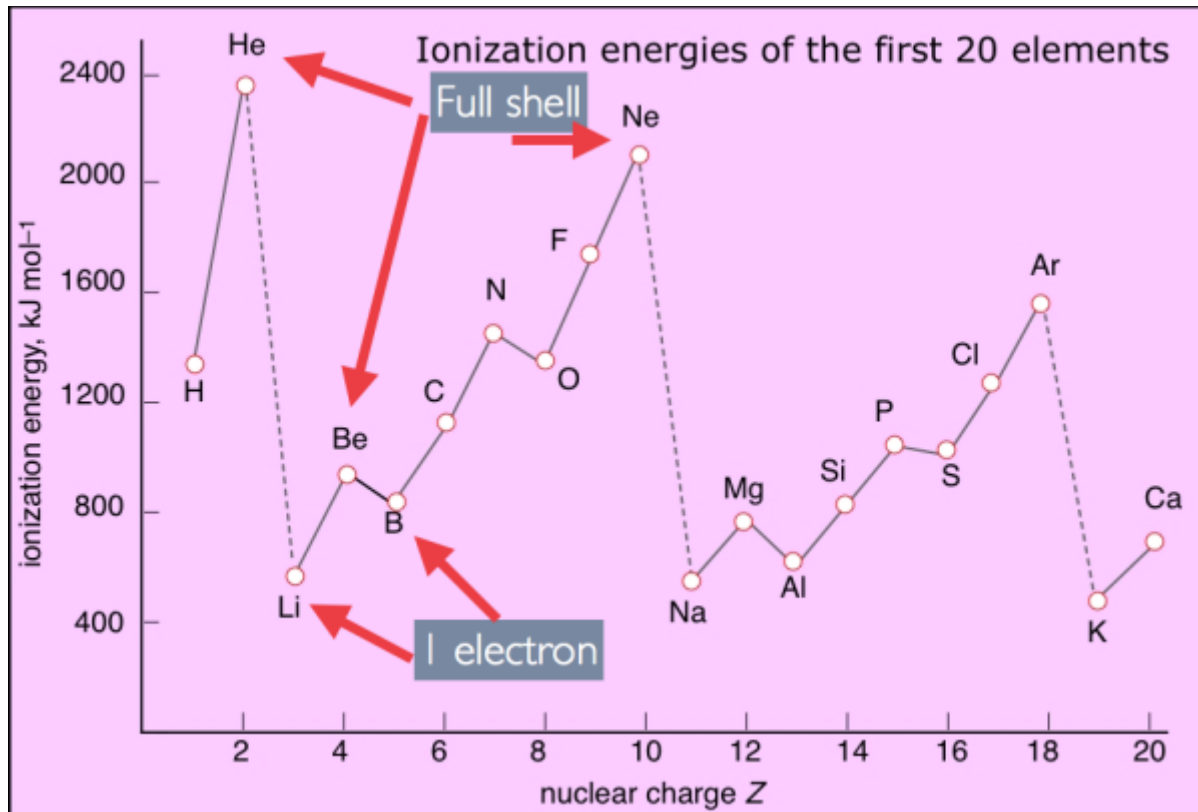


First Ionization Energy

What is it?

Example:





Electronegativity can determine the bond type

Consider a bond between two atoms, A and B



A and B both have the _____ electronegativity value, that means they both pull the electrons the _____ strength.

This is similar to _____ or _____ (Diatomic molecules)

A _____ would result.



But if B becomes _____ electronegativity than A,

B atom would have _____ electron density making it slightly _____.
Resulting in a Polar bond.

To determine the type of bond

Ex: KCl

Electronegativity Difference	Character of Bond	Percent Ionic Character
less than 0.4	non-polar covalent	0% – 5%
0.4–1.9	polar covalent	5% – 60%
greater than 1.9	ionic	>60%