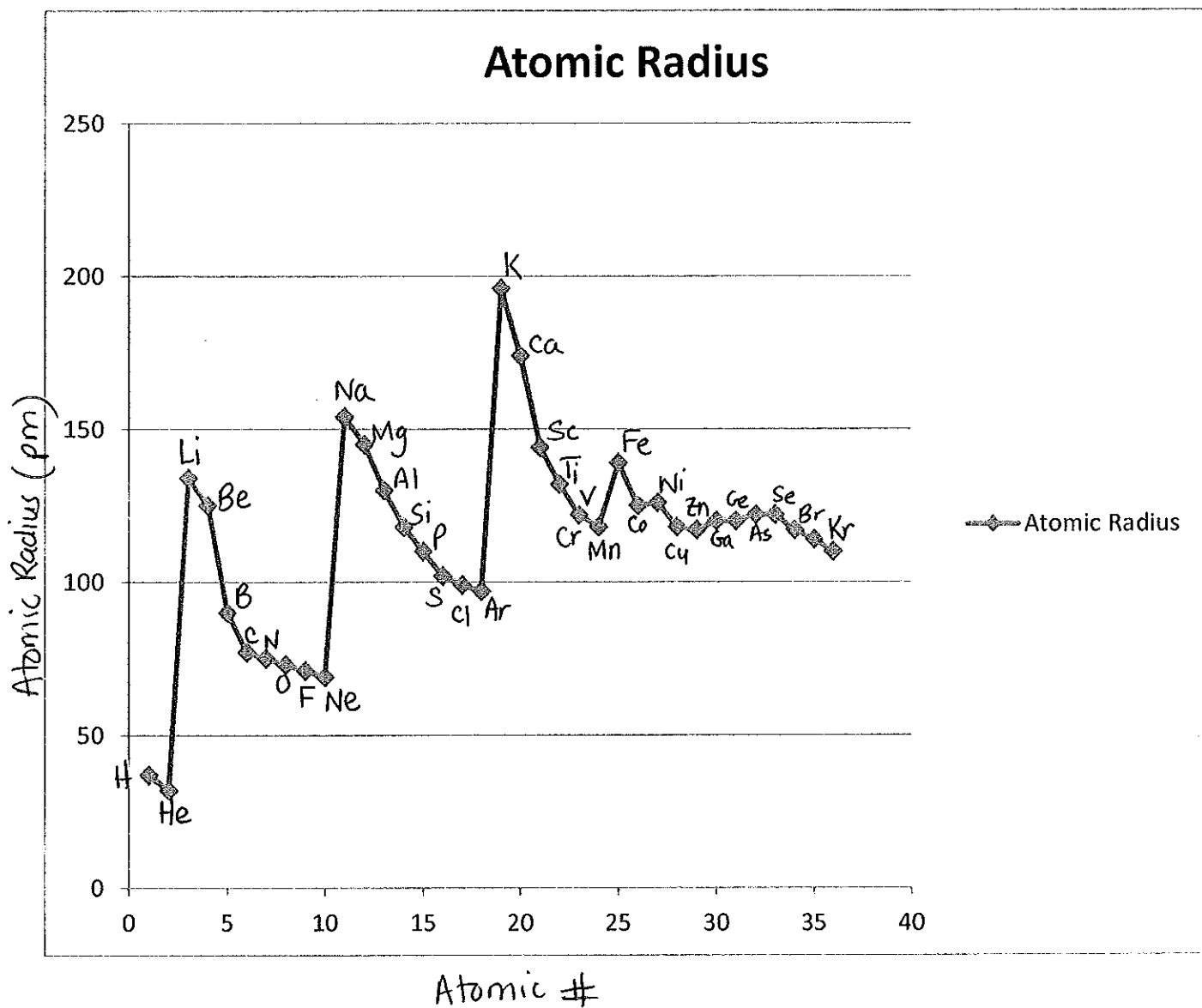


ATOMIC RADIUS

One half the distance between the nuclei of two atoms of the same element when the atoms are joined.

use the graph below & your periodic table to determine the trend in atomic radius down a family & across a period.



IONIZATION ENERGY

The energy required to remove an electron from an atom

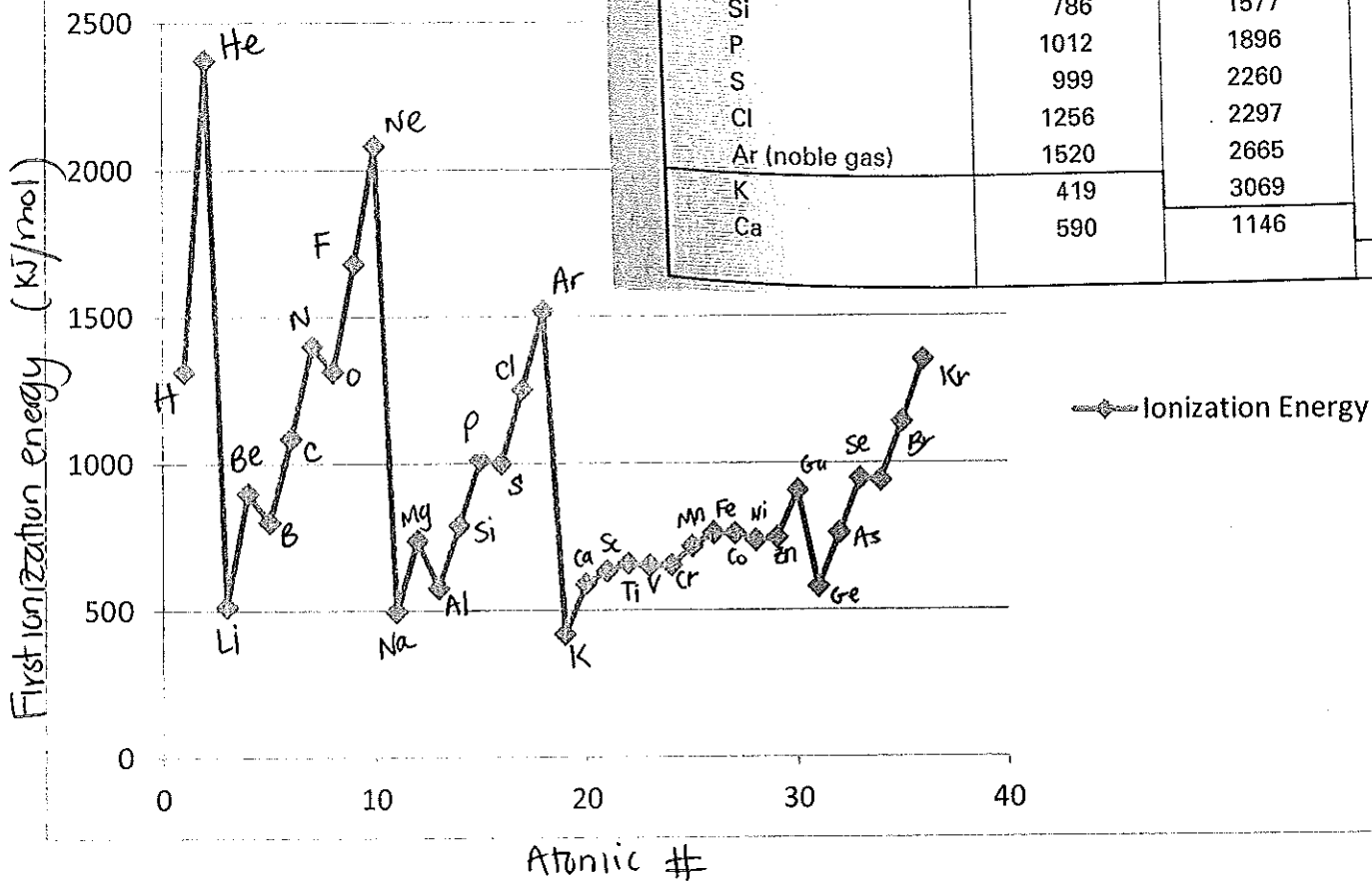
[Note: 1st ionization energy is energy to remove 1st electron;
 2nd ionization energy is energy to remove 2nd electron;
 3rd ionization energy is energy to remove 3rd electron]

Look at table & graph & periodic table to determine the trend in ionization energy down a family & across a period.

Table 6.1
Ionization Energies of First 20 Elements (kJ/mol)

Symbol	First	Second	Third
H	1312		
He (noble gas)	2372	5247	
Li	520	7297	11,810
Be	899	1757	14,840
B	801	2430	3659
C	1086	2352	4619
N	1402	2857	4577
O	1314	3391	5301
F	1681	3375	6045
Ne (noble gas)	2080	3963	6276
Na	496	4565	6912
Mg	738	1450	7732
Al	578	1816	2744
Si	786	1577	3229
P	1012	1896	2910
S	999	2260	3380
Cl	1256	2297	3850
Ar (noble gas)	1520	2665	3947
K	419	3069	4600
Ca	590	1146	4941

Ionization Energy



IONIC SIZE

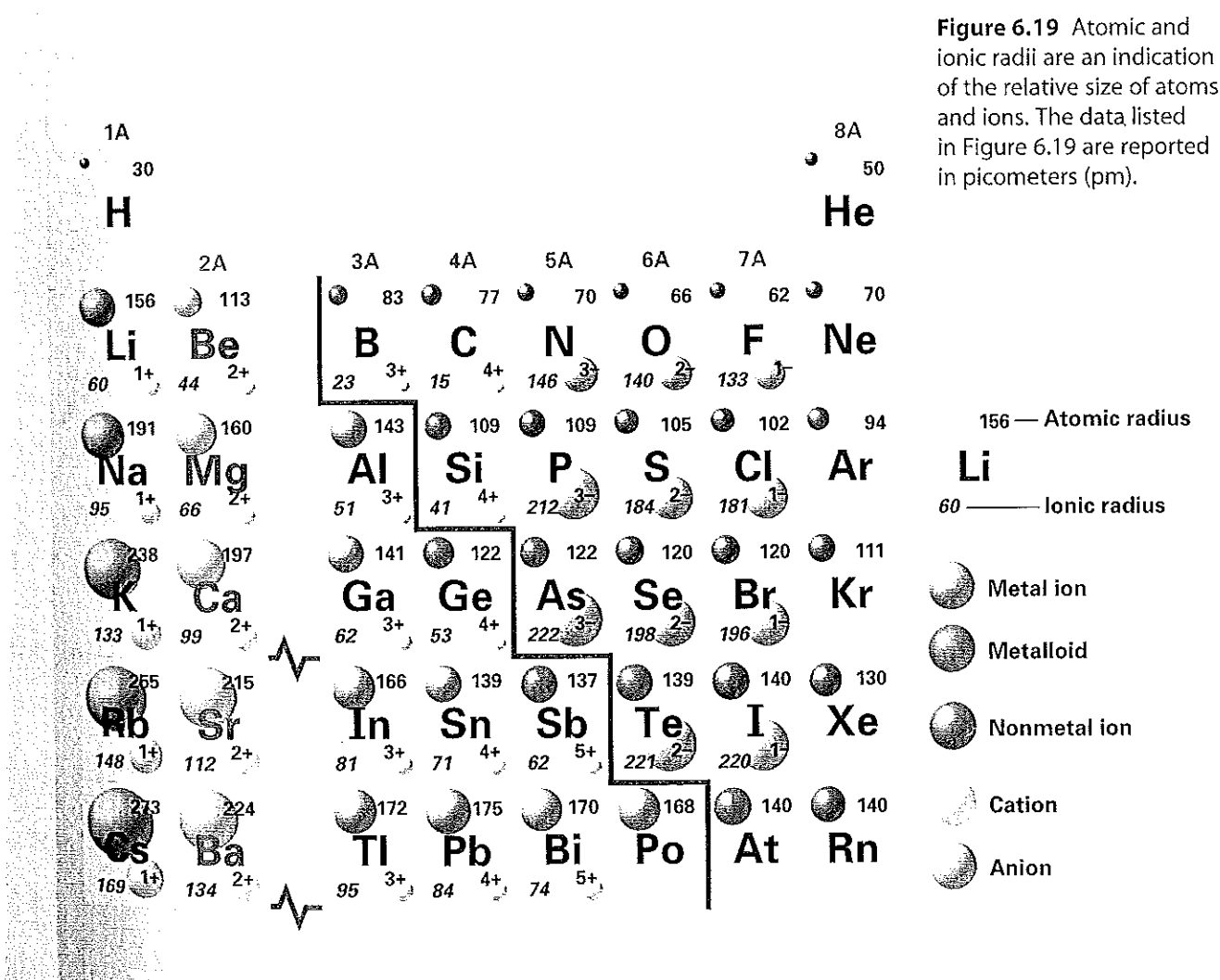
CATION: Forms when an atom loses an electron

★ cations are always smaller than neutral atom

ANION: Forms when an atom gains an electron

★ Anions are always larger than neutral atoms

Look at the chart & your periodic table to see how cation/anion size changes down a family & across a period



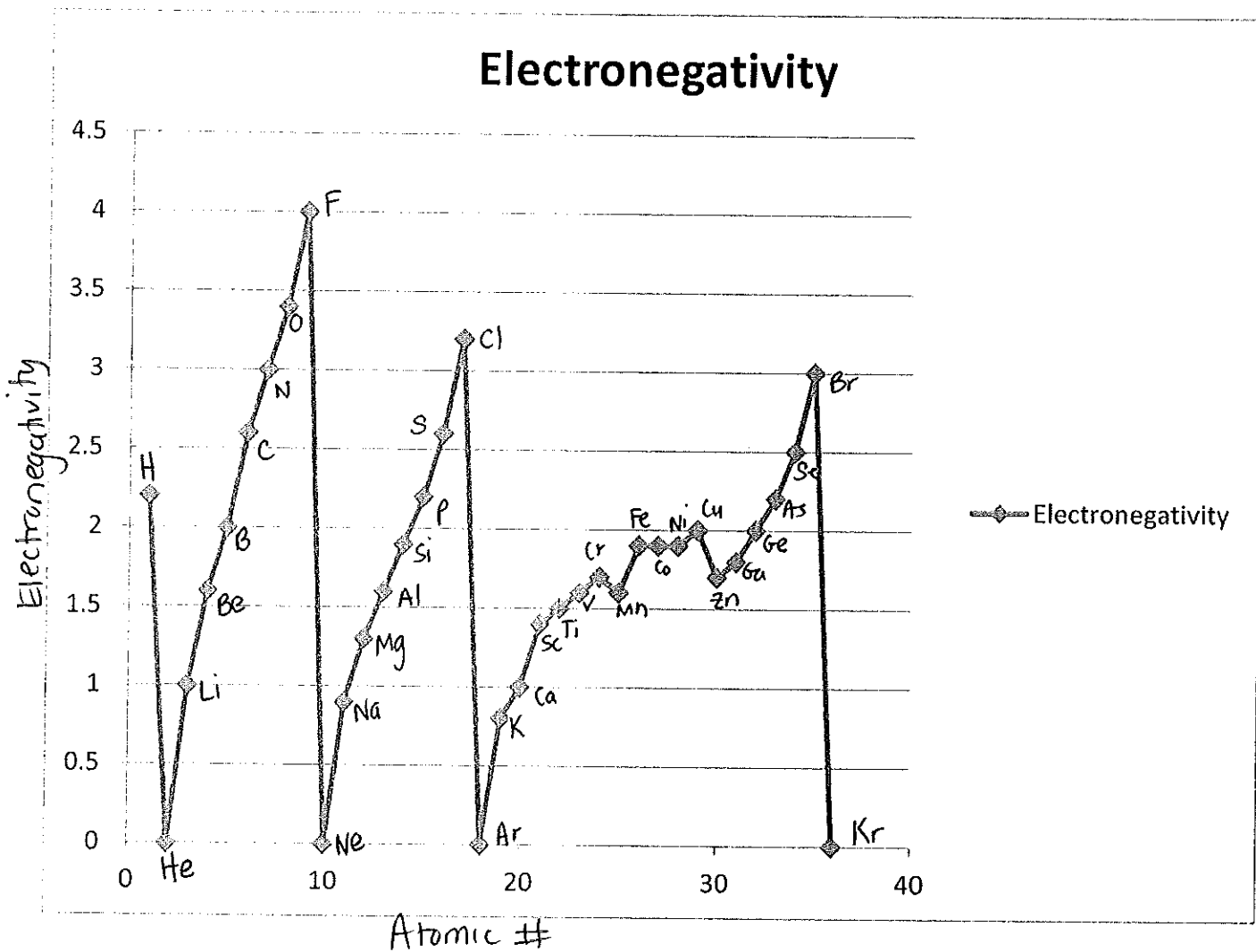
ELECTRONEGATIVITY

The ability of an atom to attract an electron when the atom is in a compound.

Look at the table, graph & periodic table to determine the trend in electronegativity down a family & across a period.

Table 6.2
Electronegativity Values for Selected Elements

H						
2.1						
Li	Be	B	C	N	O	F
1.0	1.5	2.0	2.5	3.0	3.5	4.0
Na	Mg	Al	Si	P	S	Cl
0.9	1.2	1.5	1.8	2.1	2.5	3.0
K	Ca	Ga	Ge	As	Se	Br
0.8	1.0	1.6	1.8	2.0	2.4	2.8
Rb	Sr	In	Sn	Sb	Te	I
0.8	1.0	1.7	1.8	1.9	2.1	2.5
Cs	Ba	Tl	Pb	Bi		
0.7	0.9	1.8	1.9	1.9		



SHIELDING

As energy levels are added, lower energy levels "shield" further out electrons from the pull of the nucleus

- Inner electrons "distract" nucleus from pulling outer electrons

With the above information, what do you think the trend would be down a family ; across a period?