

Atomic and Ionic Radius

Name: _____

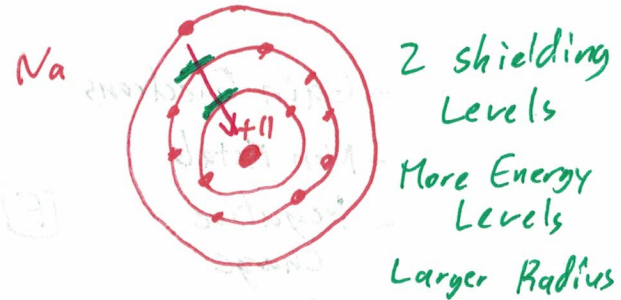
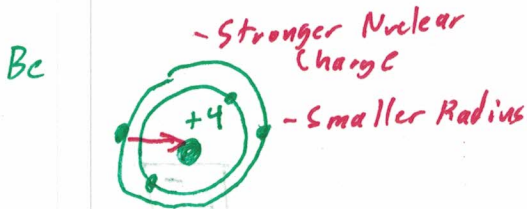
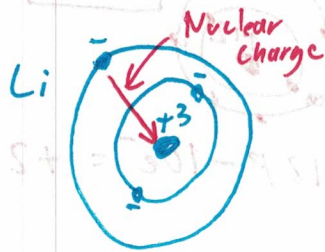
Period: _____

Date: 9/25/18

Nuclear Charge – the Positive attractive force of the nucleus of an atom. This is increased by the number of Proton.

Shielding – the inner Electron energy levels that block the **nuclear charge** from the outer Electron energy levels.

ATOMIC RADIUS – the physical Size of an atom.



Atomic Radius Increases down a column and Decreases across a period.

1A	1	H	2A	2	He																														
3	Li	Be	3	B	4	C	5	N	6	O	7	F	8	Ne																					
11	Na	12	Mg	13	Al	14	Si	15	P	16	S	17	Cl	18	Ar																				
19	K	20	Ca	21	Sc	22	Ti	23	V	24	Cr	25	Mn	26	Fe	27	Co	28	Ni	29	Cu	30	Zn	31	Ga	32	Ge	33	As	34	Se	35	Br	36	Kr
37	Rb	38	Sr	39	Y	40	Zr	41	Nb	42	Mo	43	Tc	44	Ru	45	Rh	46	Pd	47	Ag	48	Cd	49	In	50	Sn	51	Sb	52	Te	53	I	54	Xe
55	Cs	56	Ba	57	La	72	Hf	73	Ta	74	W	75	Re	76	Os	77	Ir	78	Pt	79	Au	80	Hg	81	Tl	82	Pb	83	Bi	84	Po	85	At	86	Rn
87	Ra	88	Ac	103	Lr	104	Rf	105	Db	106	Sg	107	Bh	108	Hs	109	Mt	110	Ds	111	Rg	112	Uub	114	Uuq										

Smallest

S Cl
Se Br

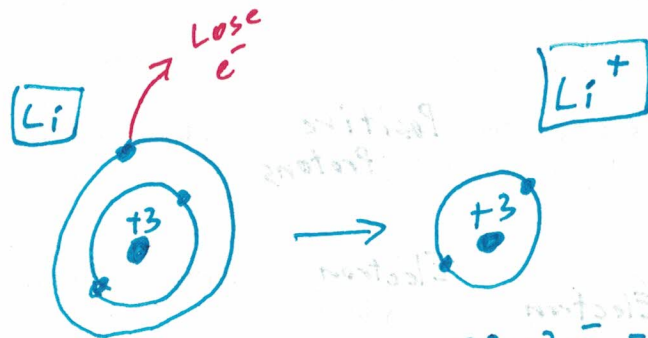
$Cl < S < Br < Se$

Largest

IONS are atoms that gain or lose electrons, resulting in an atom that has a net positive or negative charge.

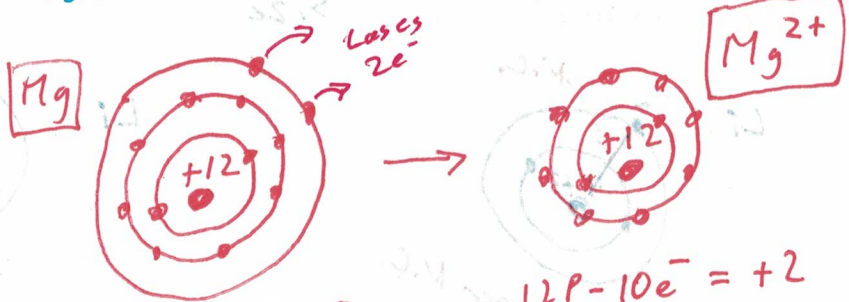
CATIONS

- Lose Electrons
- Metals
- Positive charge
- Smaller than the atom
- Loses outer shell



$$+3P - 3e^- = 0$$

$$+3P - 2e^- = +1$$

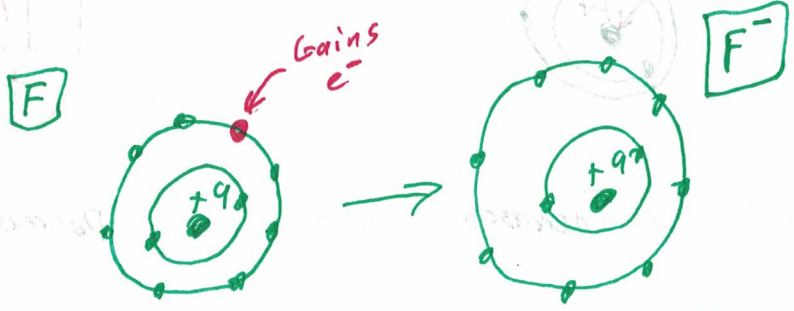


$$12P - 12e^- = 0$$

$$12P - 10e^- = +2$$

ANIONS

- Gain Electrons
- Non-Metals
- Negative charge
- Gets larger due to



$$9P - 9e^- = 0$$

$$9P - 10e^- = -1$$

Electron-Electron Repulsion

2 > 10