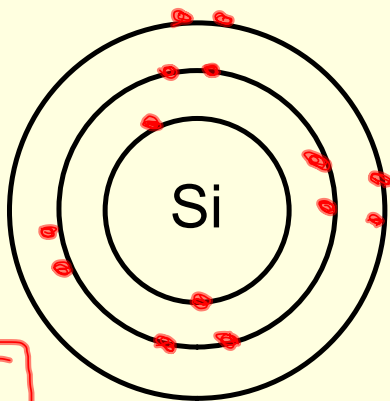


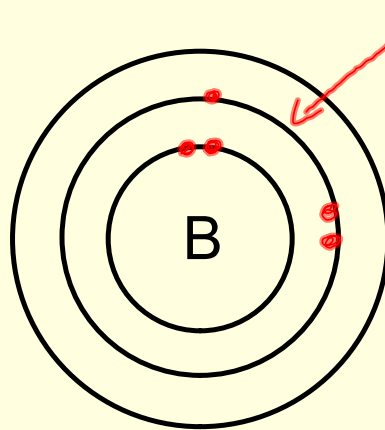
Warm-Up!

Draw Bohr diagrams for each of the following elements:



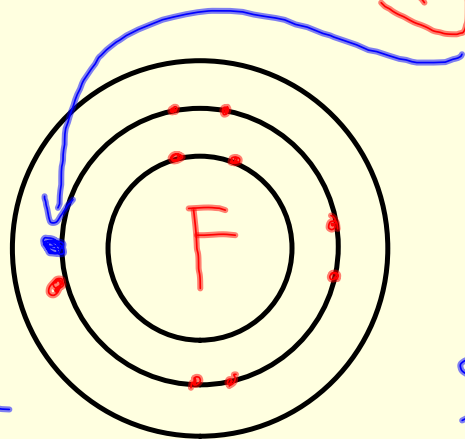
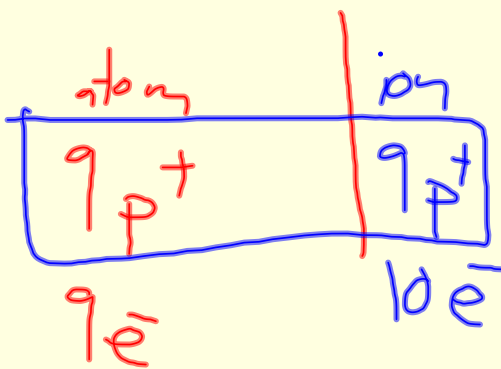
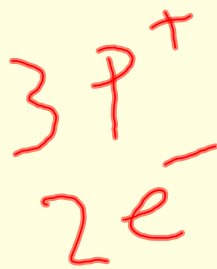
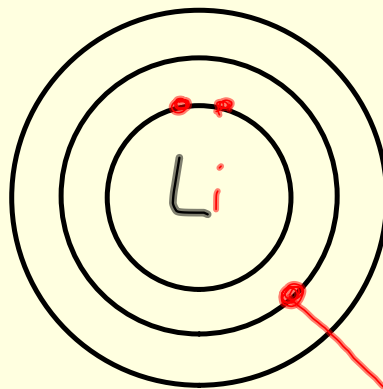
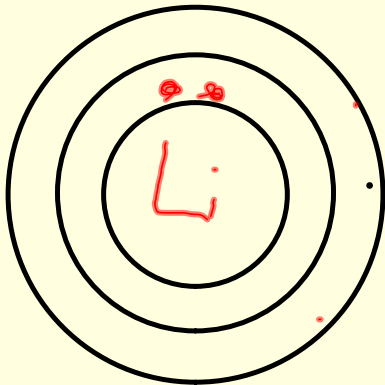
$$\begin{array}{c} 14p \\ \boxed{14e^-} \end{array}$$

$$14 - 2 = 12 - 8 = 4 - 4 = 0$$



$$\begin{array}{l} 3 \\ p^+ = 5 \\ e^- = 5 \\ 5 - 2 = 3 \end{array}$$

Homework Questions



F⁻
Stable

What are Valence Electrons?

Ions

- elements are willing to give up or gain e^- in order to have the appearance of a filled outermost orbital
- when e^- are gained or lost, an atom is then called an **ion**
- **an ion is an atom with a positive or negative charge**
- the ionic charge is the numerical value of the electric charge with a plus or minus sign

Ex. Li atom has $3p^+$ and $3e^-$

Li ion has $3p^+$ and $2e^-$ and is written Li^+



$$\begin{array}{r} +3 \\ -2 \\ \hline +1 \end{array}$$

Which groups would tend to lose electrons? Gain electrons?

- **metals** lose electrons to become stable

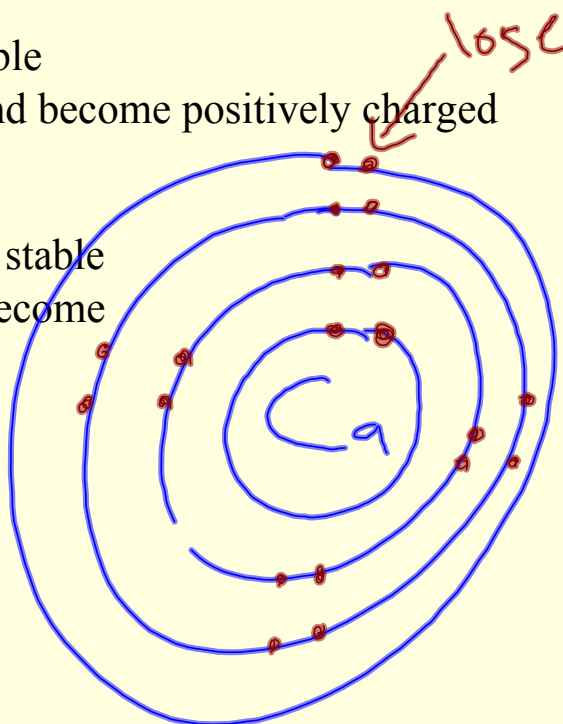
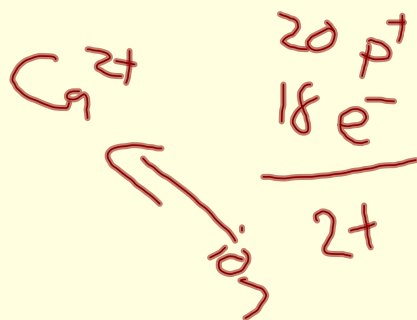
Ex. magnesium will lose two e^- and become positively charged

Mg atom \rightarrow Mg^{2+}

- **nonmetals** gain electrons to become stable

Ex. oxygen will gain two e^- and become

O atom \rightarrow O^{2-}



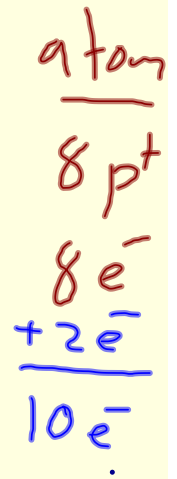
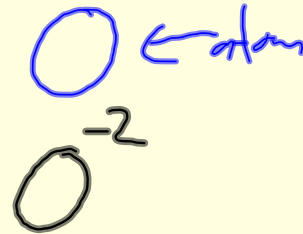
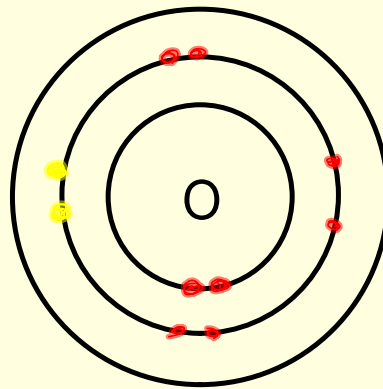
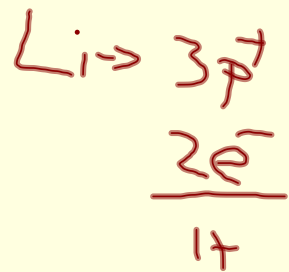
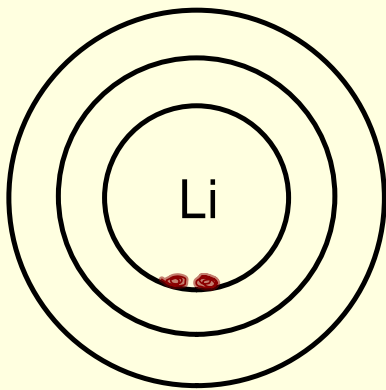
Periodic Table

Periodic Table of the Elements

1	IA																																O															
1	H																																	He														
2	IIA																		IIIA		IVA	VA	VIA	VIIA	10																							
3	Li	Be																	B	C	N	O	F	Ne																								
4	Na	Mg	IIIB	IVB	VB	VIB	VII B	VII		IB	IIB	Al	Si	P	S	Cl	Ar																															
5	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36																														
6	K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr																														
7	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54																														
8	Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe																														
9	55	56	57	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86																														
10	Cs	Ba	*La	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn																														
11	87	88	89	104	105	106	107	108	109	110	111	112	113																																			
12	Fr	Ra	+Ac	Rf	Ha	Sg	Ns	Hs	Mt	110	111	112	113																																			

* Lanthanide Series	58	59	60	61	62	63	64	65	66	67	68	69	70	71
	Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu
+ Actinide Series	90	91	92	93	94	95	96	97	98	99	100	101	102	103
	Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr

Bohr Diagrams of Stable Ions



Bohr Diagrams of Stable Ions

