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	Element	1st Orbit ²	2nd Orbit ⁸	3rd Orbit ⁸	
1	H	1			1st
2	He	2			
	Li	2	1		2nd
	Be	2	2		
	B	2	3		
	C	2	4		
	N	2	5		
	O	2	6		
	F	2	7		
	Ne	2	8		
	Na	2	8	1	3rd
	Mg	2	8	2	
	Al	2	8	3	
	Si	2	8	4	
	P	2	8	5	
	S	2	8	6	
	Cl	2	8	7	
	Ar	2	8	8	
	K	2	8	8	4th
	Ca	2	8	8	

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⁺

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 → Mg²⁺
- nonmetals gain electrons to become stable
Ex. oxygen will gain two e and become
O atom → O²⁻

F (atom)

$9p^+, 9e^-$

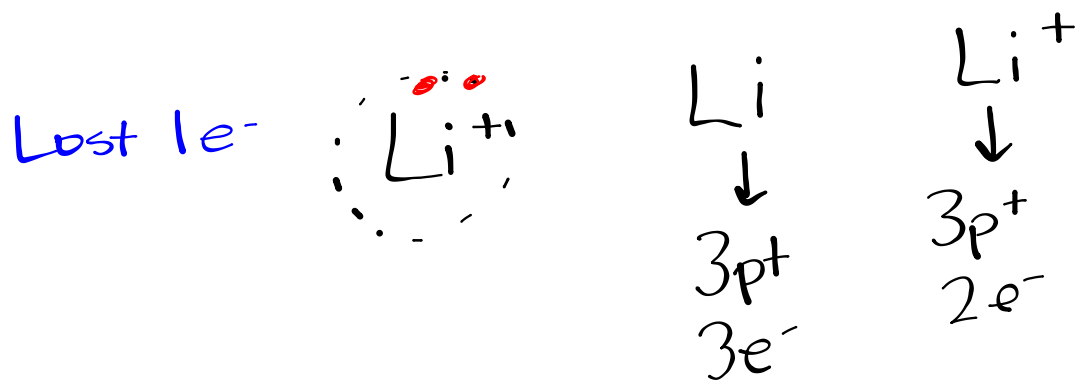
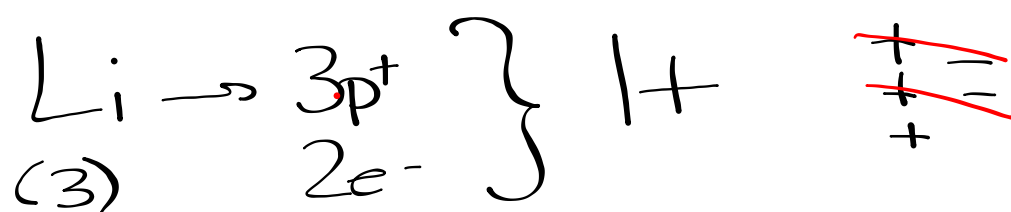


F (ion)

$9p^+, 10e^-$

Gain 1





Alkaline Earth Metals

