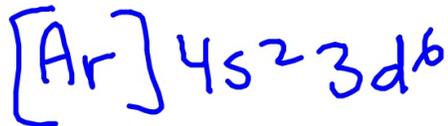
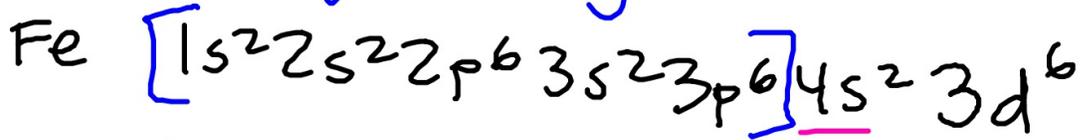




Noble gas e^- config



2 valence e^-

N

Atomic #

E levels

short cut e^- config

valence e^-

Group #

Coulombic Attraction & Periodic Trends Notes

① How does distance affect strength of attraction?

longer distance = weaker attraction

shorter distance = stronger attraction

② How does # of protons affect strength of attraction?

more protons = stronger attraction

③ How does strength of attraction affect how easy it is to remove an e^- (football) from an atom?

weak attraction = easy to remove e^-

strong attraction = hard to remove e^-

Ionization energy (IE) - the energy

needed to remove an e^- from an atom

stronger attraction = higher IE

weaker attraction = lower IE

IE Examples

a)	F	vs.	Cl
-	2 E levels	-	3 E levels
-	9 protons	-	17 protons
-	shorter distance = stronger attraction = harder to remove e^- = higher IE	-	greater distance = weaker attraction = easier to remove e^- = lower IE

b)	Li	vs.	C
-	2 E levels	-	2 E levels
-	3 protons	-	6 protons
		-	more protons = stronger attraction = harder to remove e^- = higher IE

④ How does strength of attraction affect the ability to "grab the fumbled football"?

Stronger attraction = greater ability

Electronegativity (EN) - the ability

to attract an e^- from another atom in a chemical bond.

EN example

c)	N	vs.	P
	- 2 E levels		- 3 E levels
	- 7 protons		- 15 protons
	- shorter distance = stronger attraction = greater ability = higher EN		

* He has the highest IE
(it is the smallest atomic radius)

* F has the highest EN
(exclude noble gases for EN
b/c noble gases do not bond)