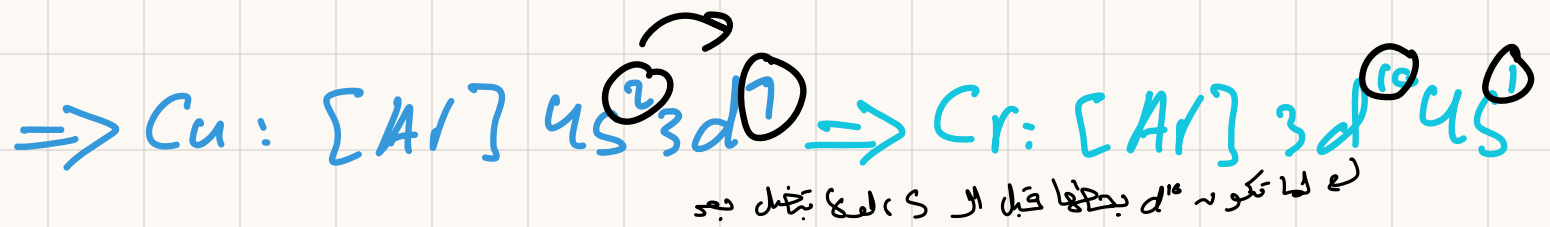
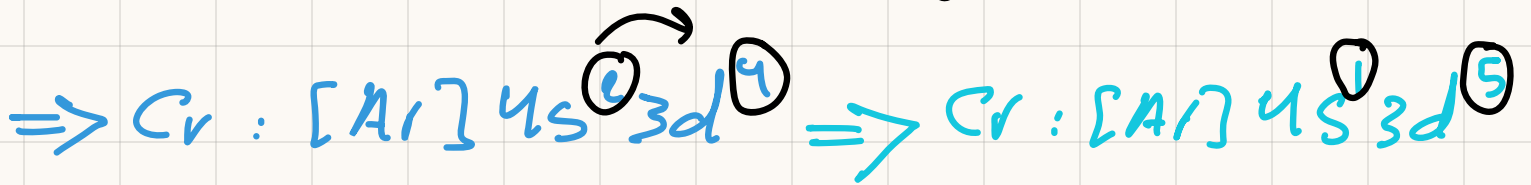


ch 8

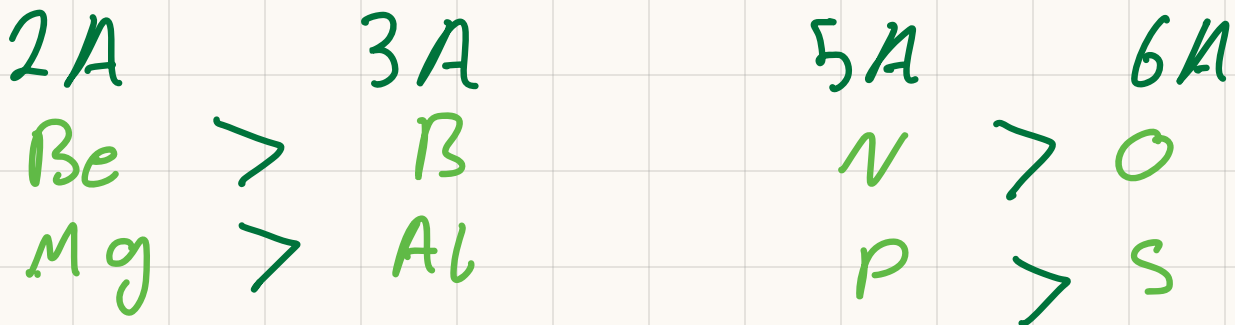
# exceptions to the Building-up principle



لما تكونه d<sup>10</sup> بظننا قبل ال s ليعا بظنل بعد

its more stable when d is half filled

# exceptions to the ionization energy



$\Rightarrow$  As a result of electron repulsion

ChA

# # electron configuration of ions

## 3A

the bonding is covalent

Boron (B)  $\rightarrow$  doesn't form ionic compounds with  $B^{+3}$

Thallium (Tl)  $\rightarrow$  has compounds with  $Tl^{+3}$  and  $Tl^{+1}$

- the remaining elements of the group, form ionic compounds containing  $3^+$

## 4A

first three elements  $\rightarrow$  form covalent compounds (C, Si, Ge)  $\rightarrow$  metalloids

Sn, Pb  $\rightarrow$  commonly form ionic compounds with  $2^+$  ions

$Sn^{+2}$   
 $\downarrow$   
ionic

$Sn^{+4}$   
 $\downarrow$   
covalent

5A



# Anions of groups 5A to 7A gain electrons to form noble-gas or pseudo-noble-gas configurations

# H can form compounds of the -1 ions

Although the electron affinity of  $N = 0$ ,  $N^{-3}$  is stable in the presence of  $Li^+$  and other alkaline earth elements ions

## # exceptions to the octet rule

⇒  $\text{PF}_5 \rightsquigarrow$  more than 8 electrons

⇒  $\text{BF}_3 \rightsquigarrow$  less than 8 electrons

⇒  $\text{BeCl}_2 \rightsquigarrow$  less than 8 electrons

⇒  $\text{SF}_6, \text{SF}_4 \rightsquigarrow$  more than 8 electrons

⇒  $\text{XeF}_4 \rightsquigarrow$  more than 8 electrons

⇒  $\text{AlCl}_3 \rightsquigarrow$  less than 8 electrons

# ch 2

## # Naming molecular compounds

- $H_2S \rightarrow$  dihydrogen sulfide  
hydrogen sulfide  
commonly named
- $NO \rightarrow$  nitrogen monoxide  
nitric oxide  
commonly named
- $H_2O \rightarrow$  water
- $NH_3 \rightarrow$  ammonia
- $H_2Se \rightarrow$  hydrogen selenide or  
dihydrogen selenide