

Co

  
 Cobalt  
element

CO

  
 Carbon Monoxide

---

N  
O  
C  
S  
P  
H

→

Element

$H_2 + O_2$

↓

atom

combine →

Chemical change

Compound

$H_2O$

↓

Molecule

New Properties

Aug 1-9:56 AM

Table (F)

$SO_4^{-2}$

= Sulfate

$SO_3^{-2}$

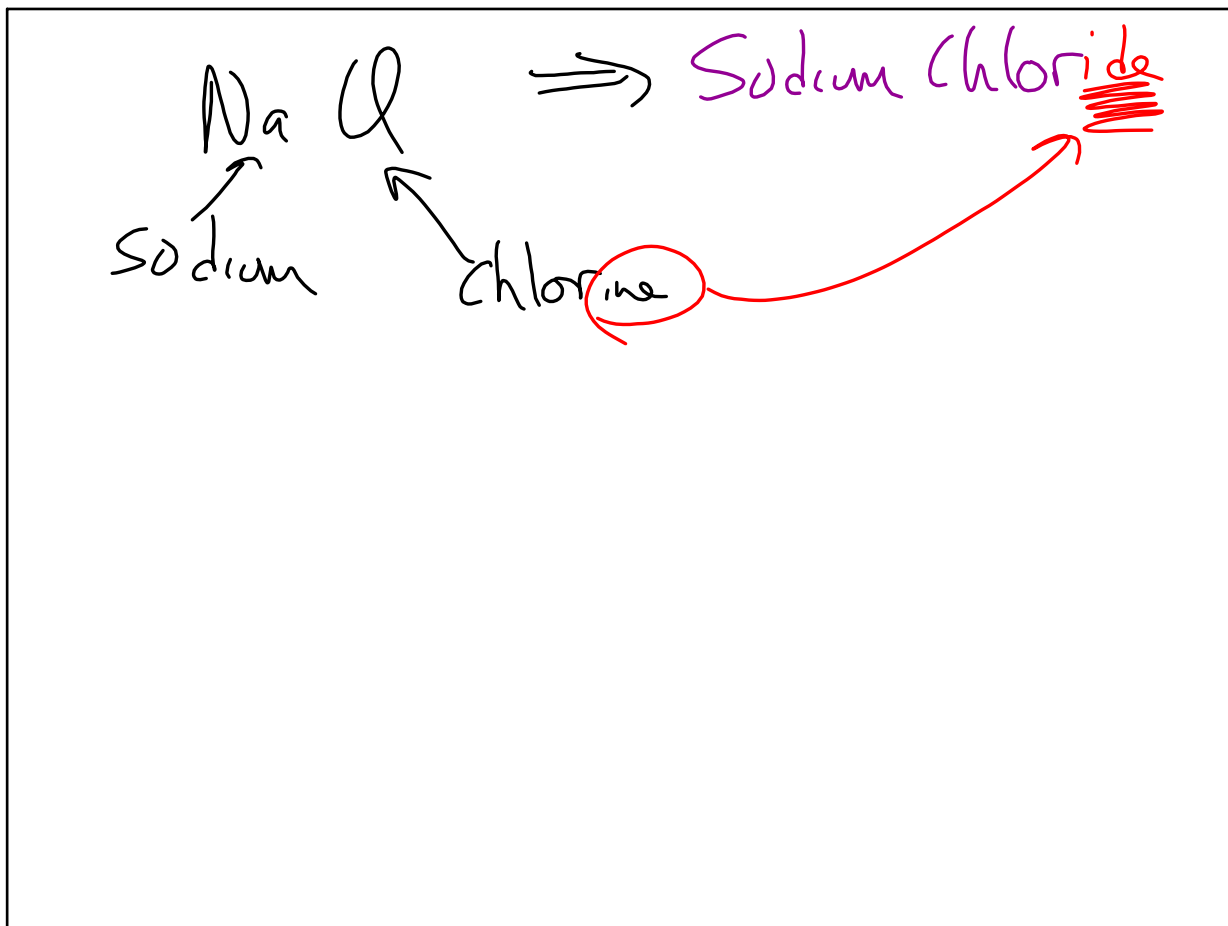
= Sulfite

Polyatomic IONS

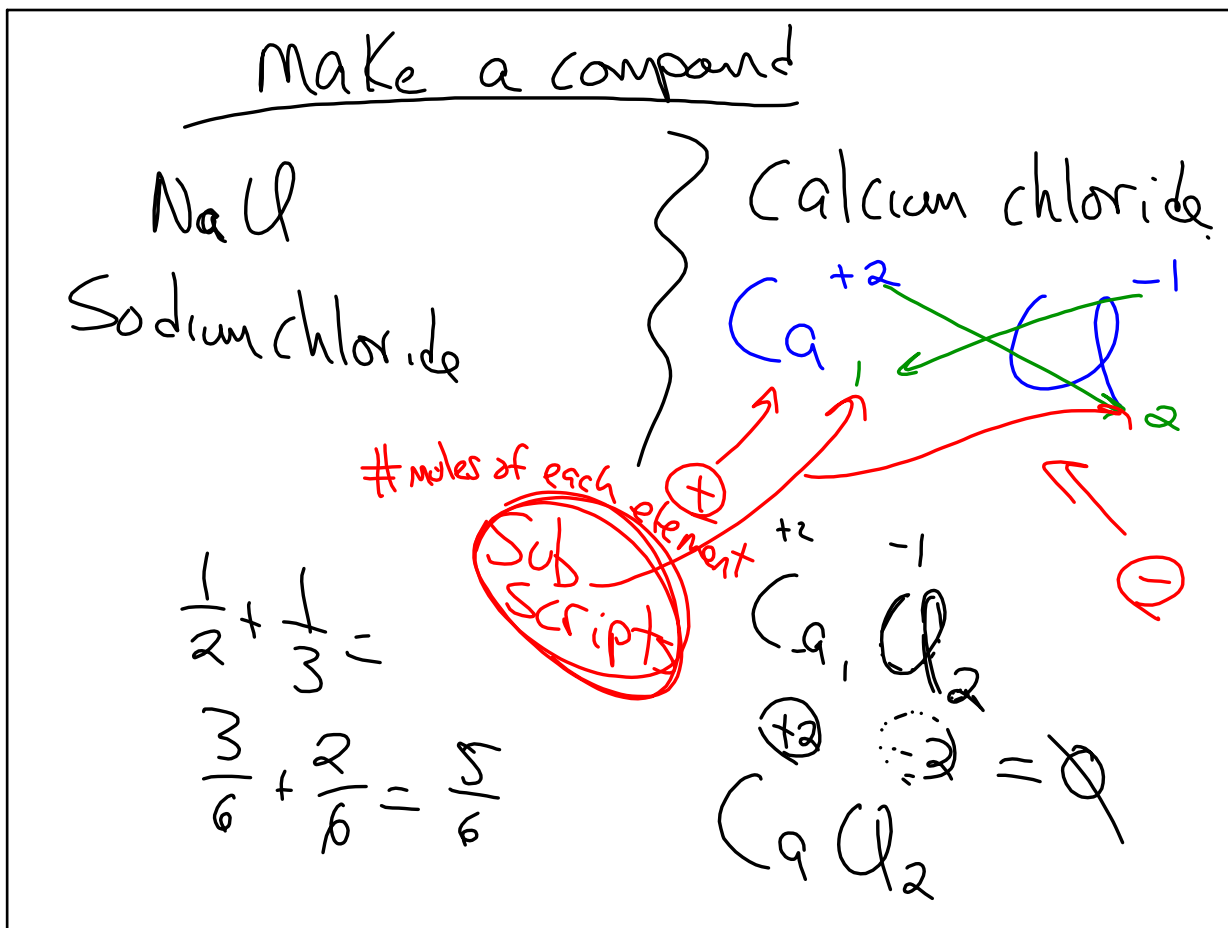
↑

+ or -  
charge

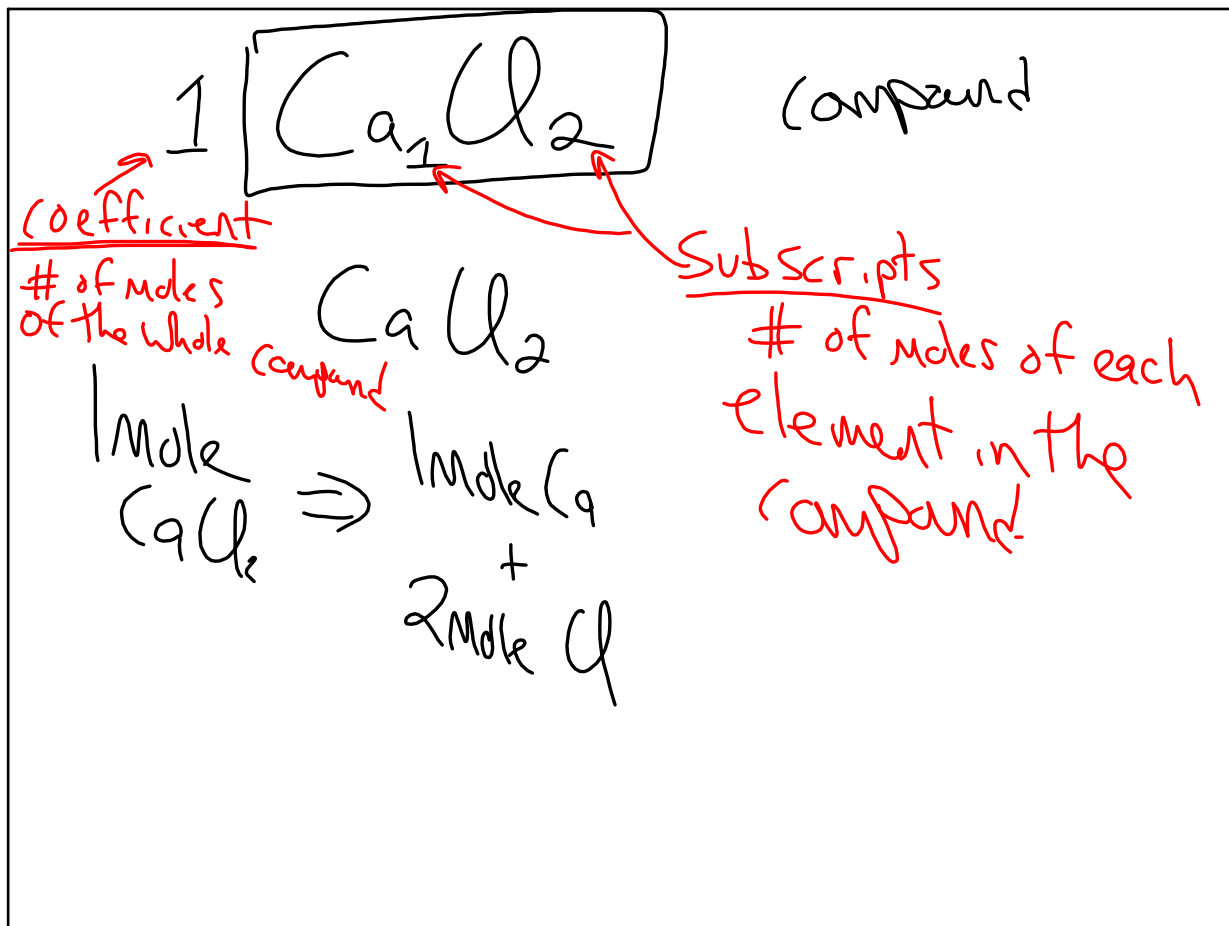
Aug 1-10:12 AM



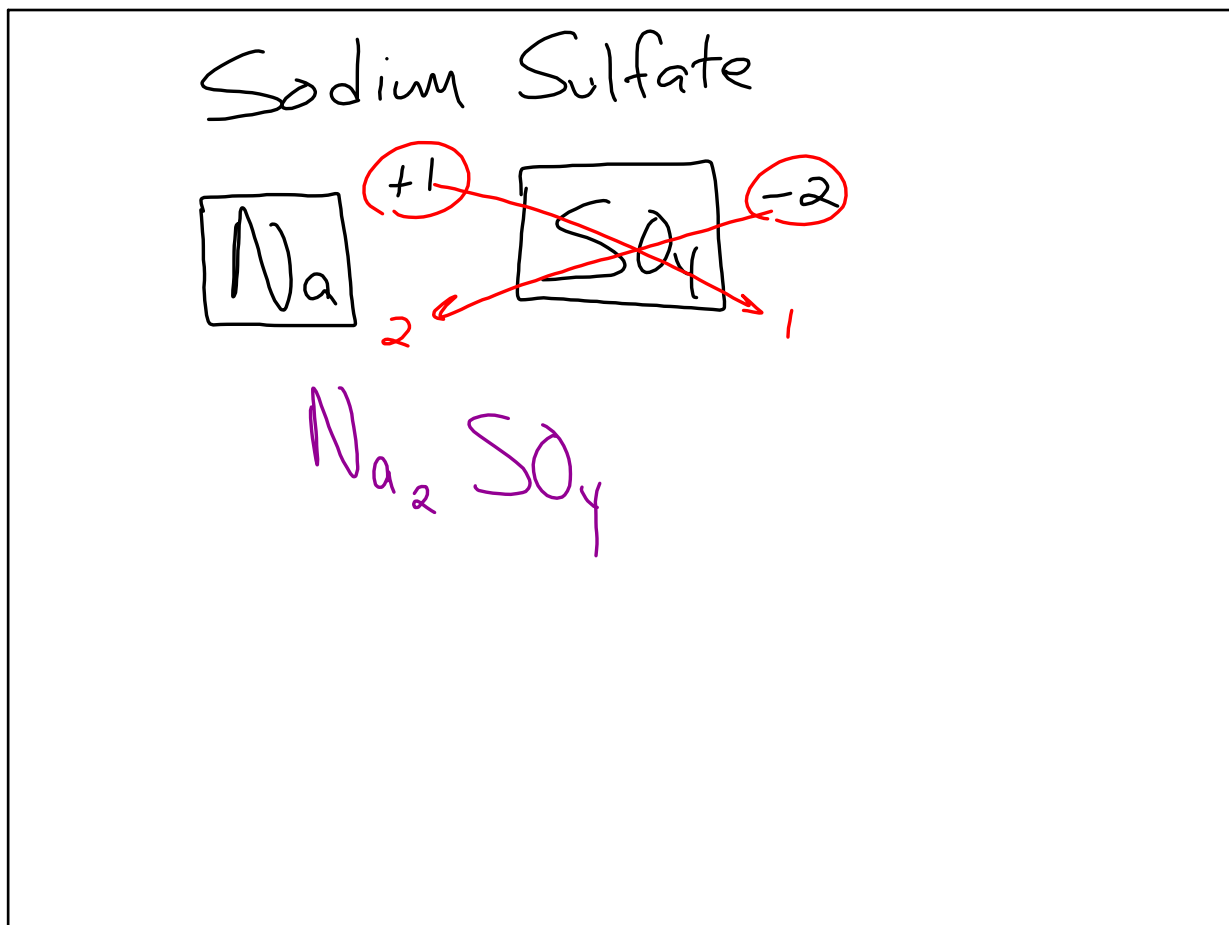
Aug 1-10:14 AM



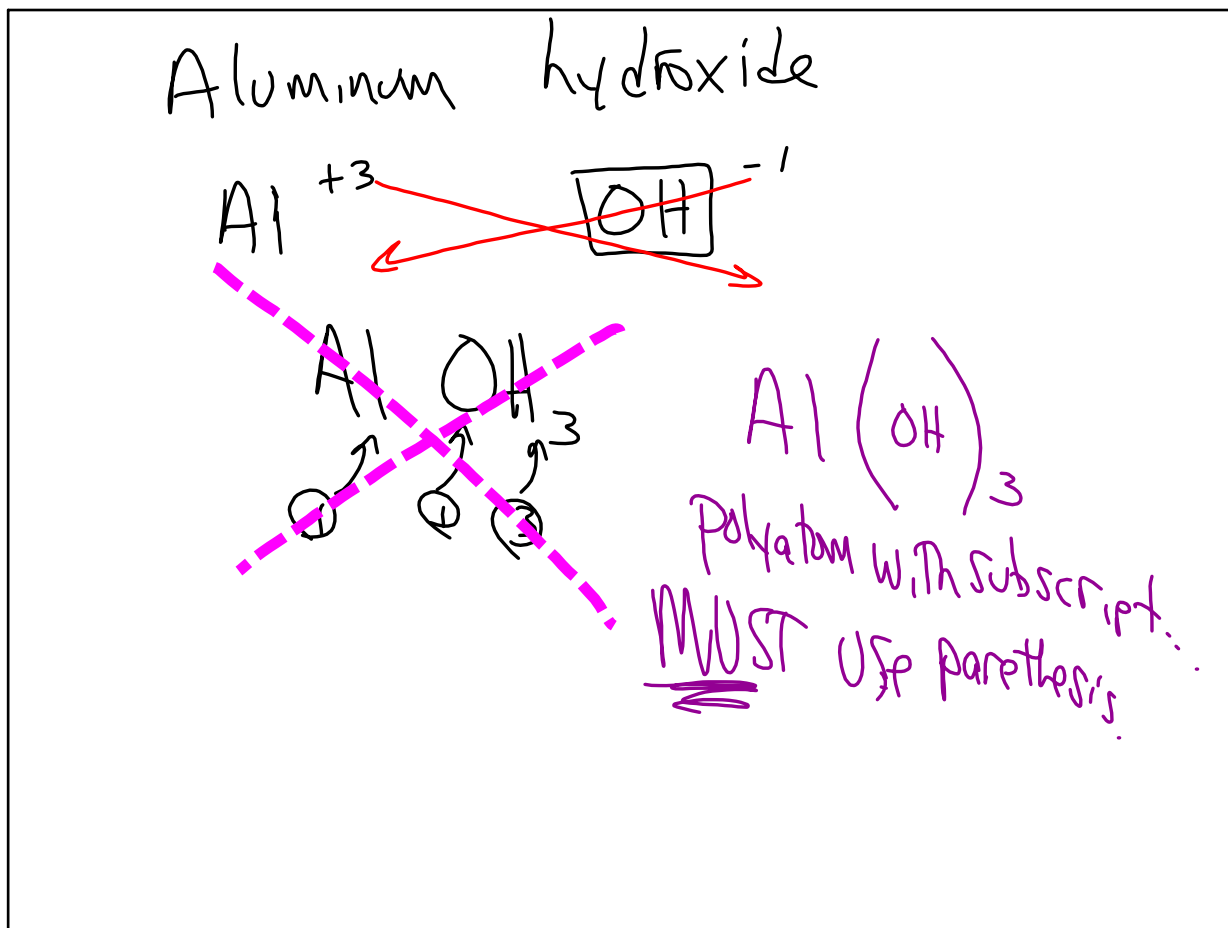
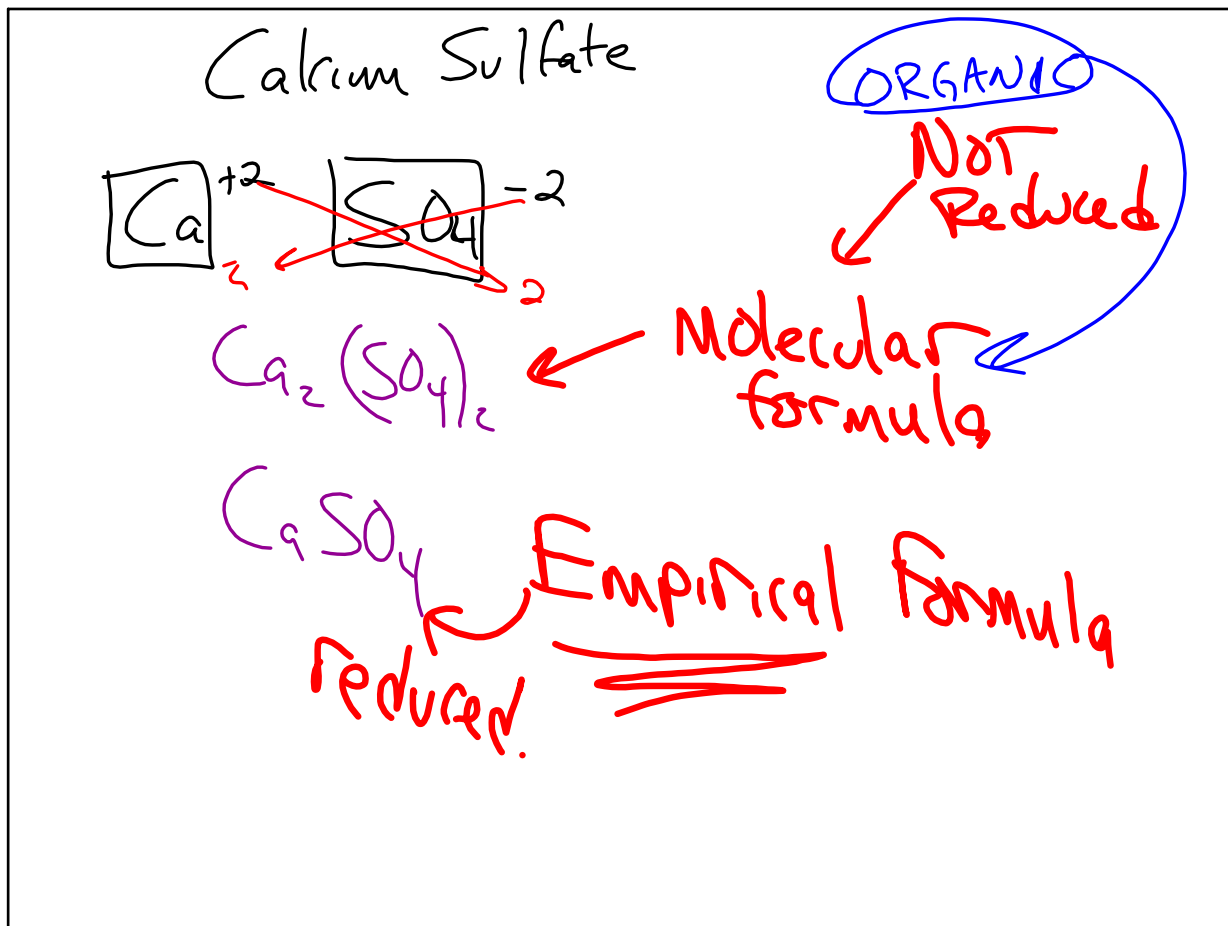
Aug 1-10:18 AM

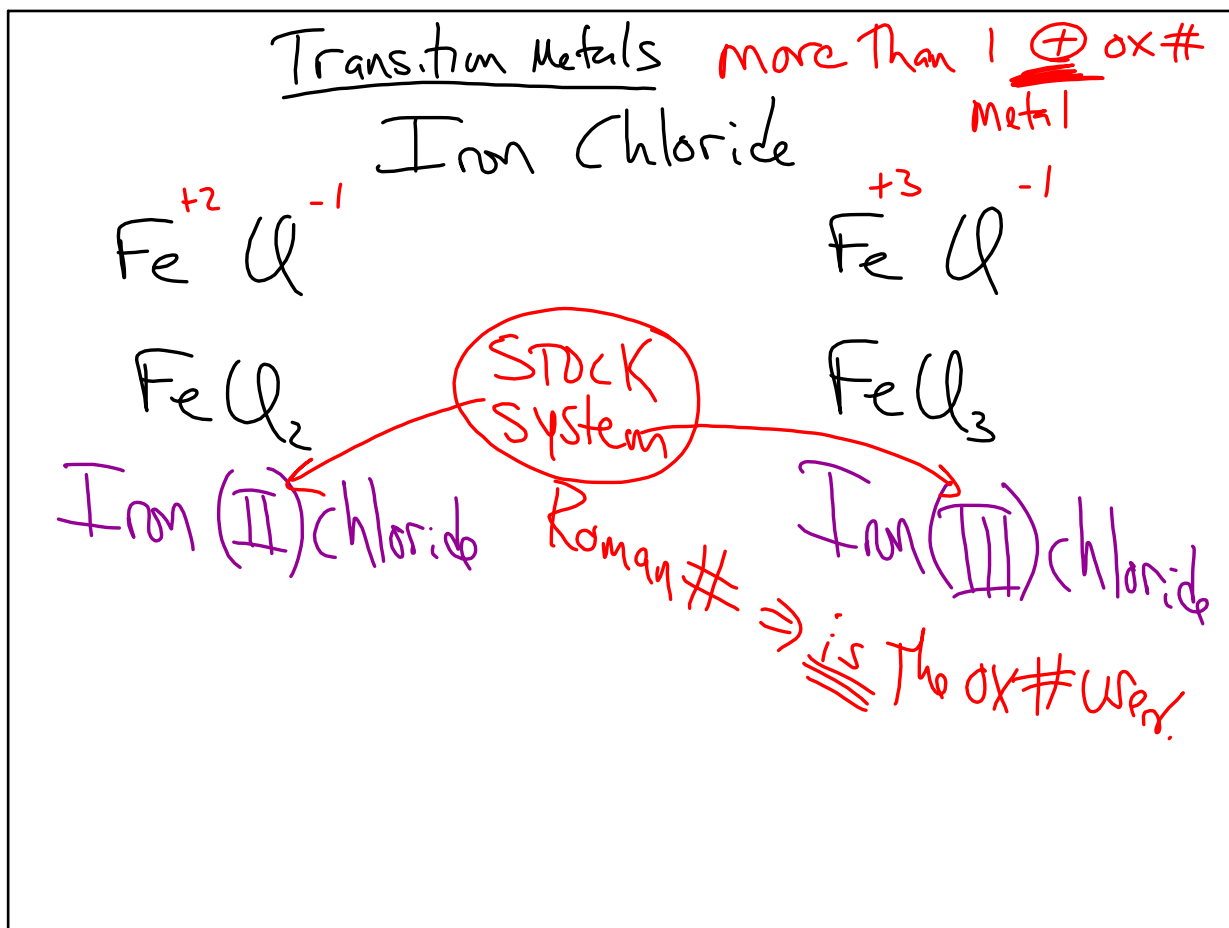


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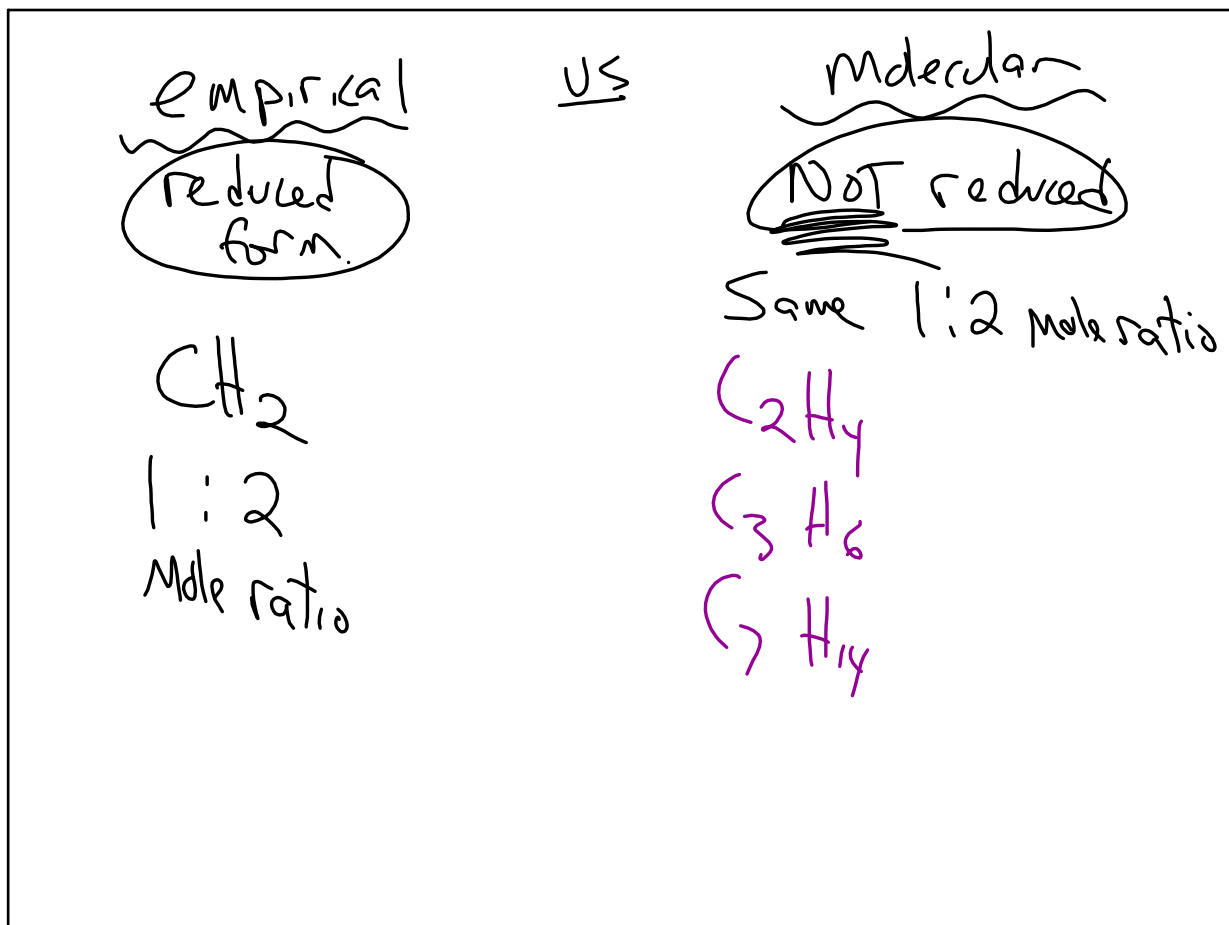


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Aug 1-10:38 AM



Aug 1-10:45 AM

All are Binary compounds.

ONLY 2 items

CaSO<sub>4</sub>

Calcium Sulfate

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Endothermic vs Exothermic

"Enter" goes in

Feel cold  
Absorbs heat.

Reactants → Products

Reactants + Heat → Products

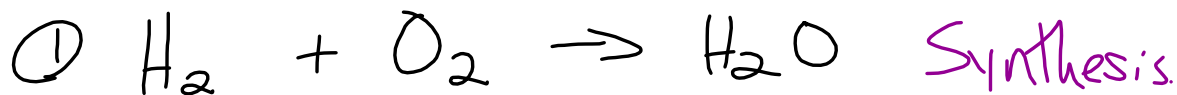
Reactant → Products + heat

"Exit" goes out.  
Gives off.

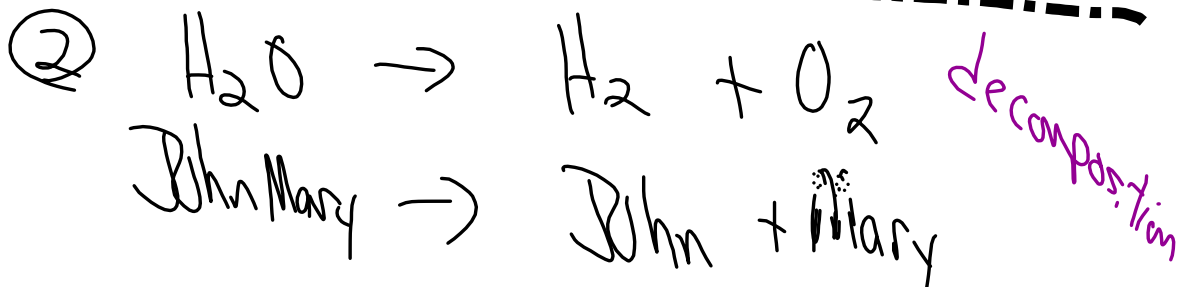
Feel hot

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## 5 Types of Chemical Equations



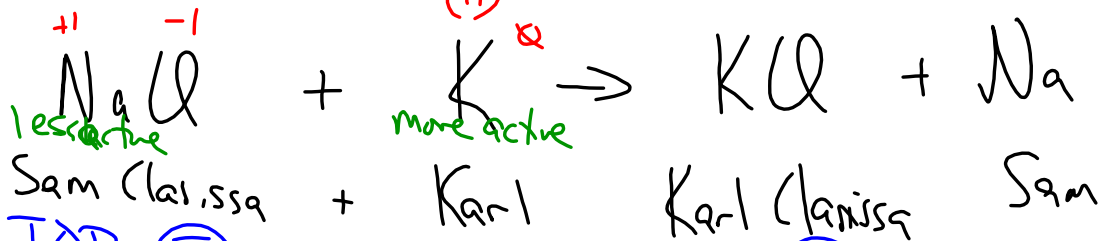
John + Mary → JohnMary



JohnMary → John + Mary

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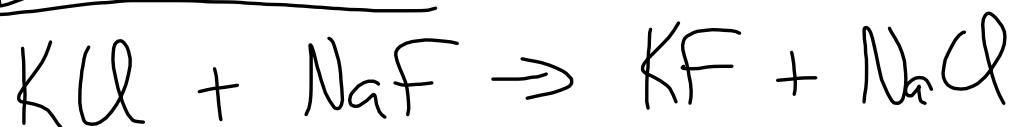
## ③ Single Replacement (I)



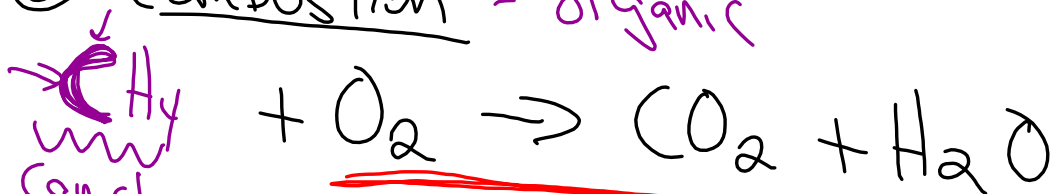
TOP (I) can replace bottom (I) metal.  
More active replaces less active.

Aug 1-11:09 AM

④ Double replacement



⑤ Combustion - organic



Hy  
Can change

always the same

Aug 1-11:19 AM



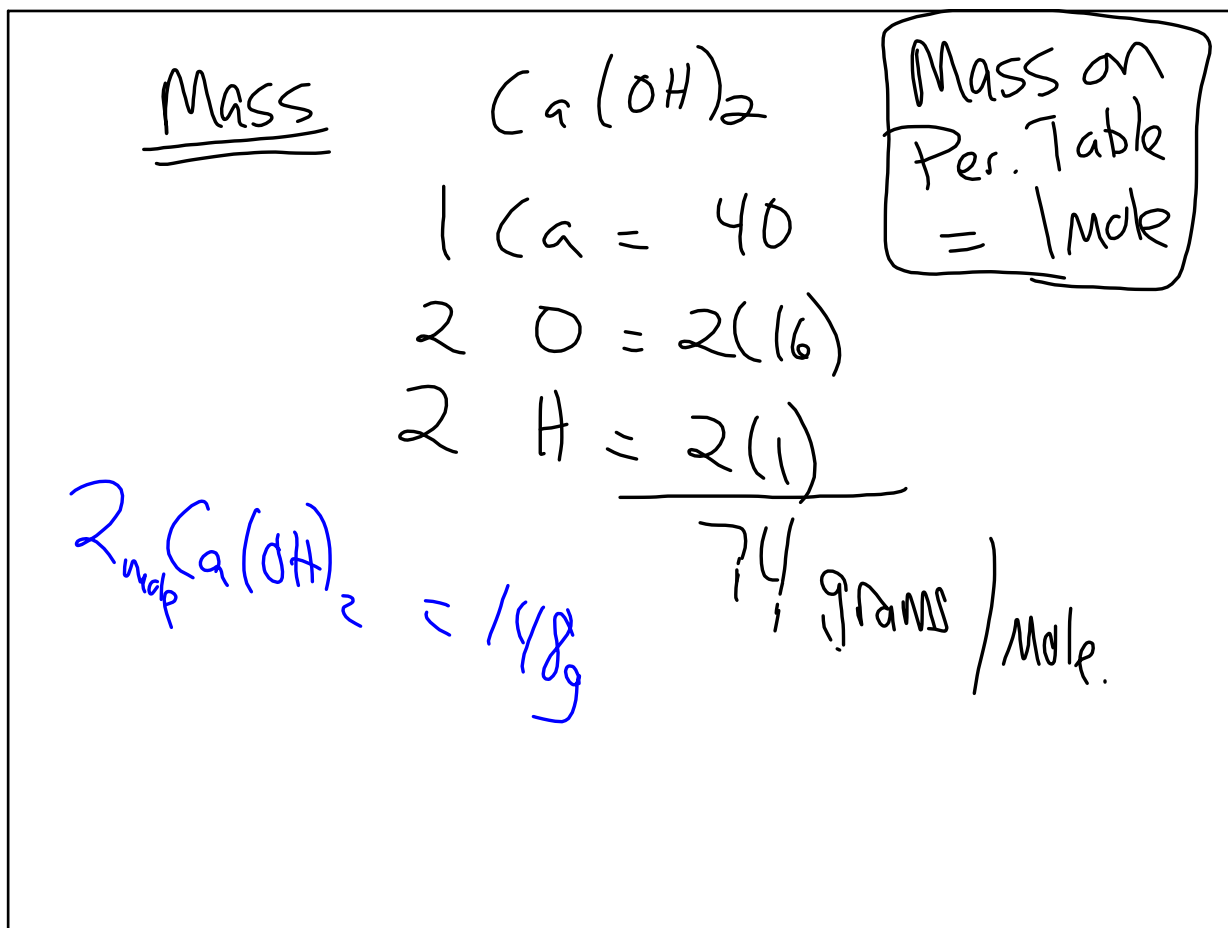
1 : 2 : 1 : 2

Mole ratio

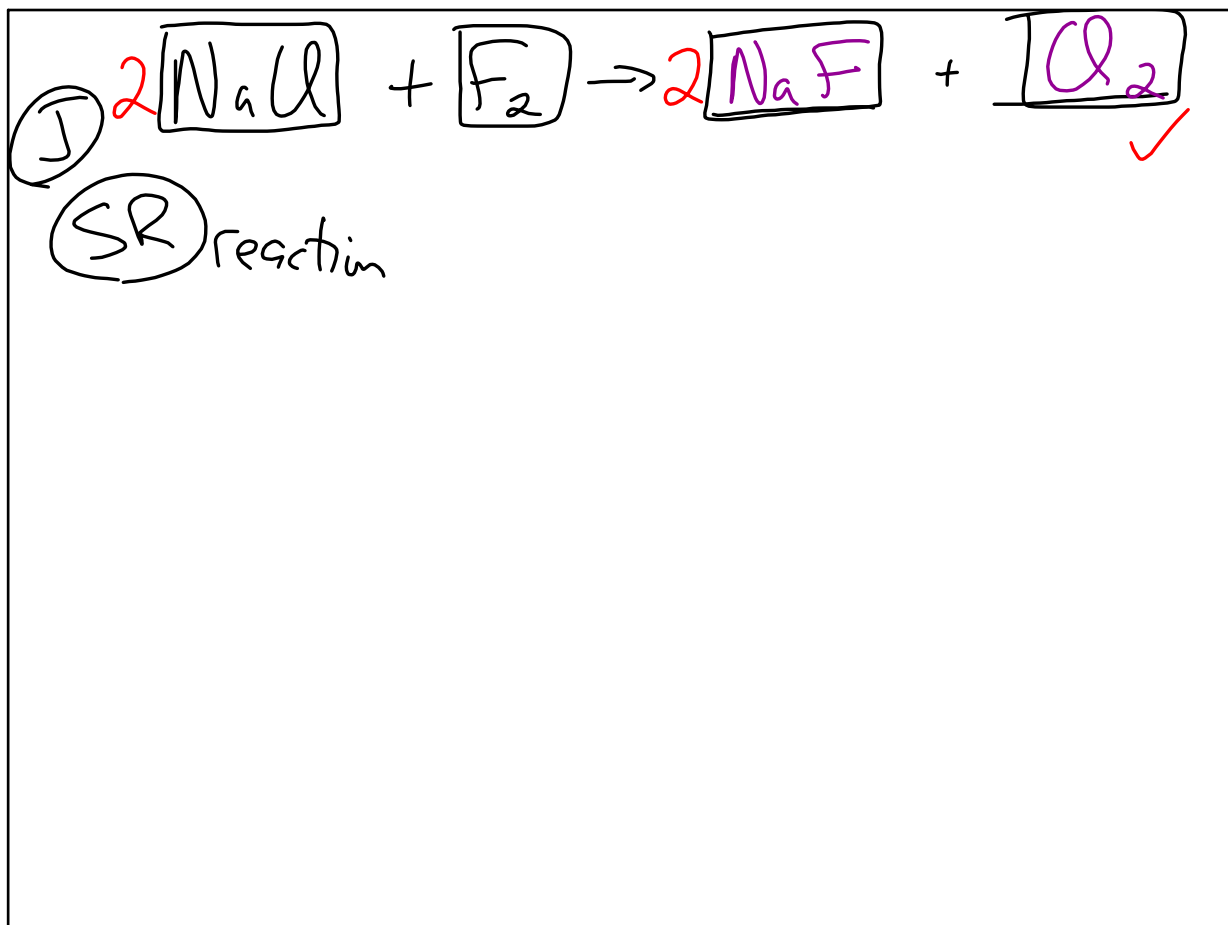
coefficients

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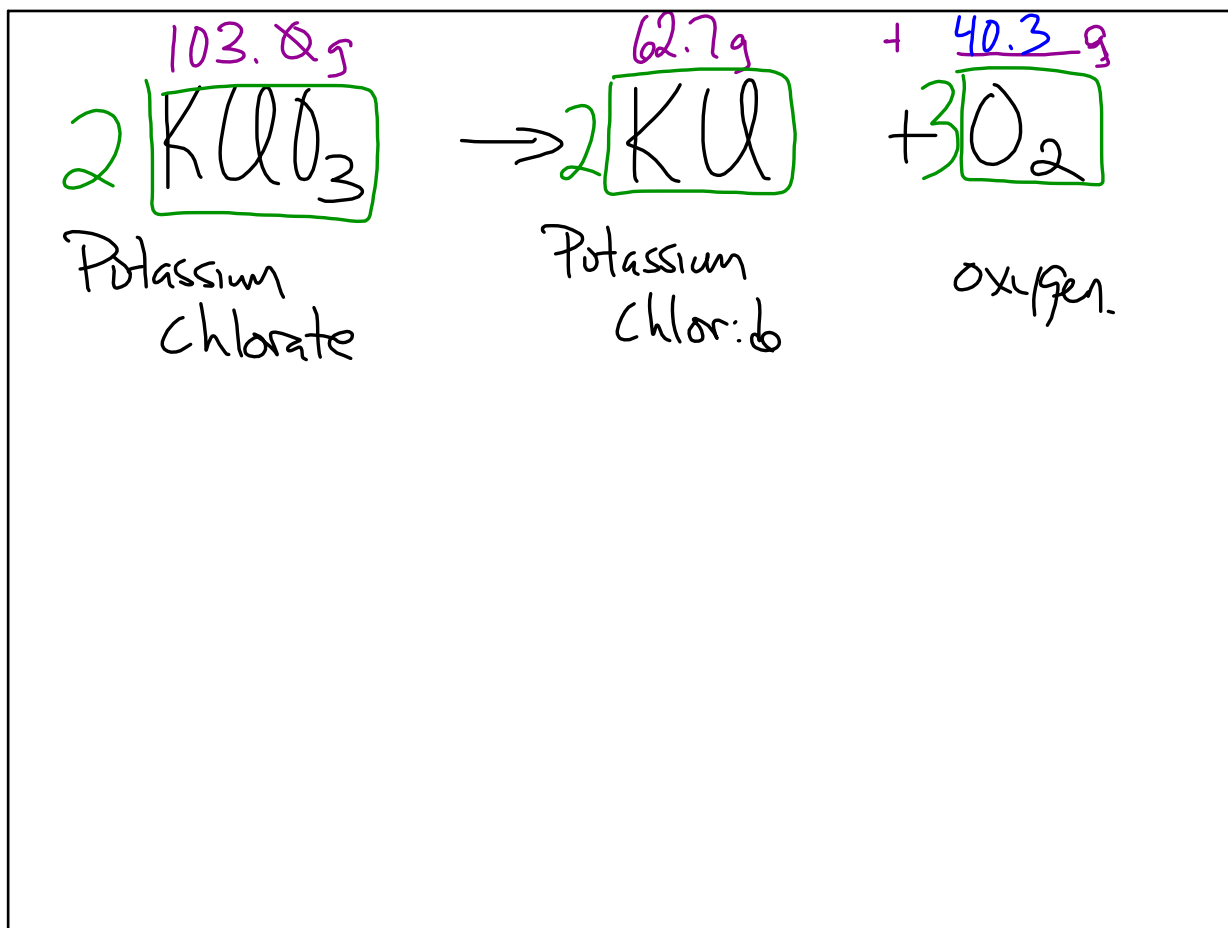




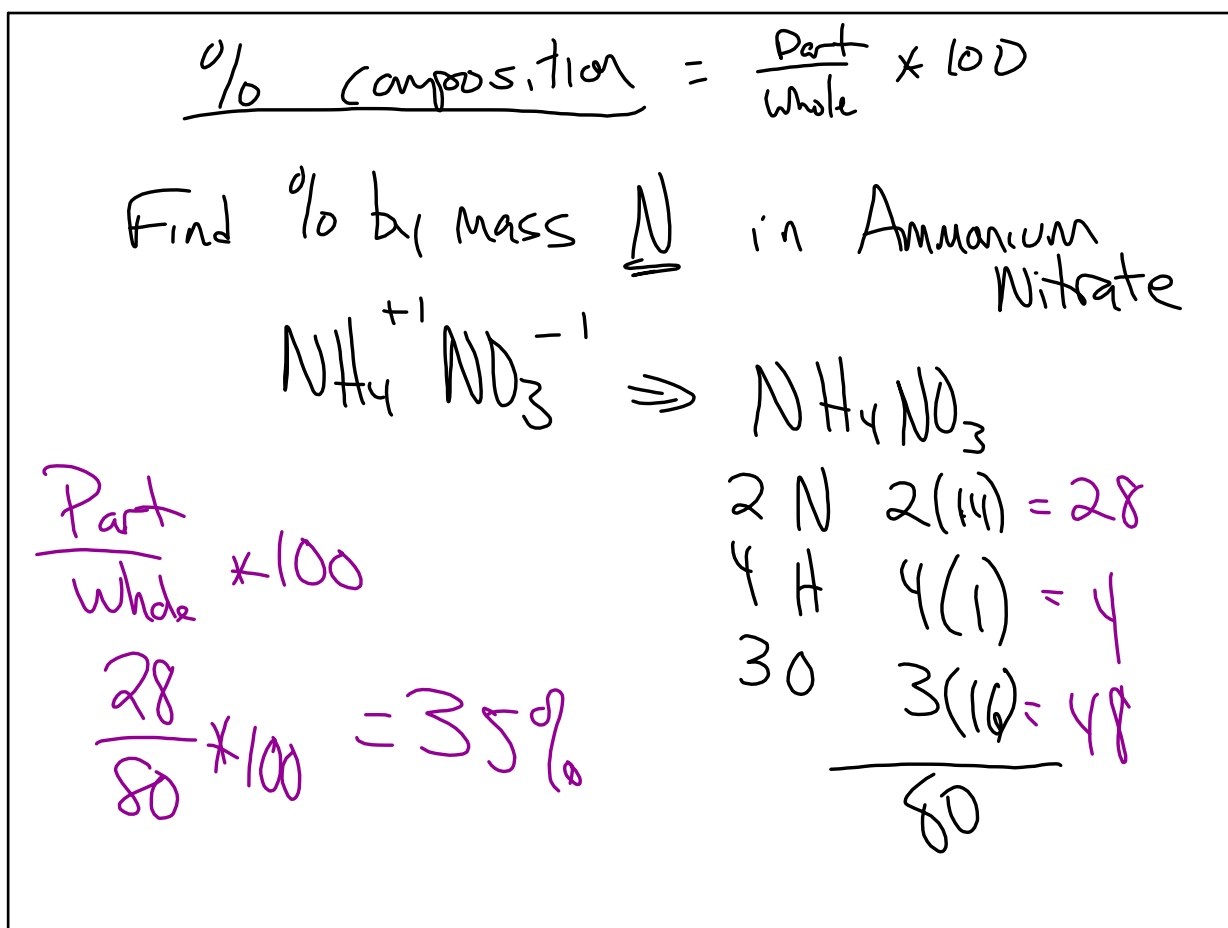
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Aug 1-11:30 AM



Aug 1-11:35 AM



Aug 1-11:40 AM

$\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$

hydrate  $\Rightarrow$  Water is stuck inside the crystal structure.

$1 \text{ Cu} = 64$   
 $1 \text{ S} = 32$   
 $4 \text{ O} = 64$   
 $10 \text{ H} = 10$   
 $5 \text{ O} = 80$   


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 $250$

of 10

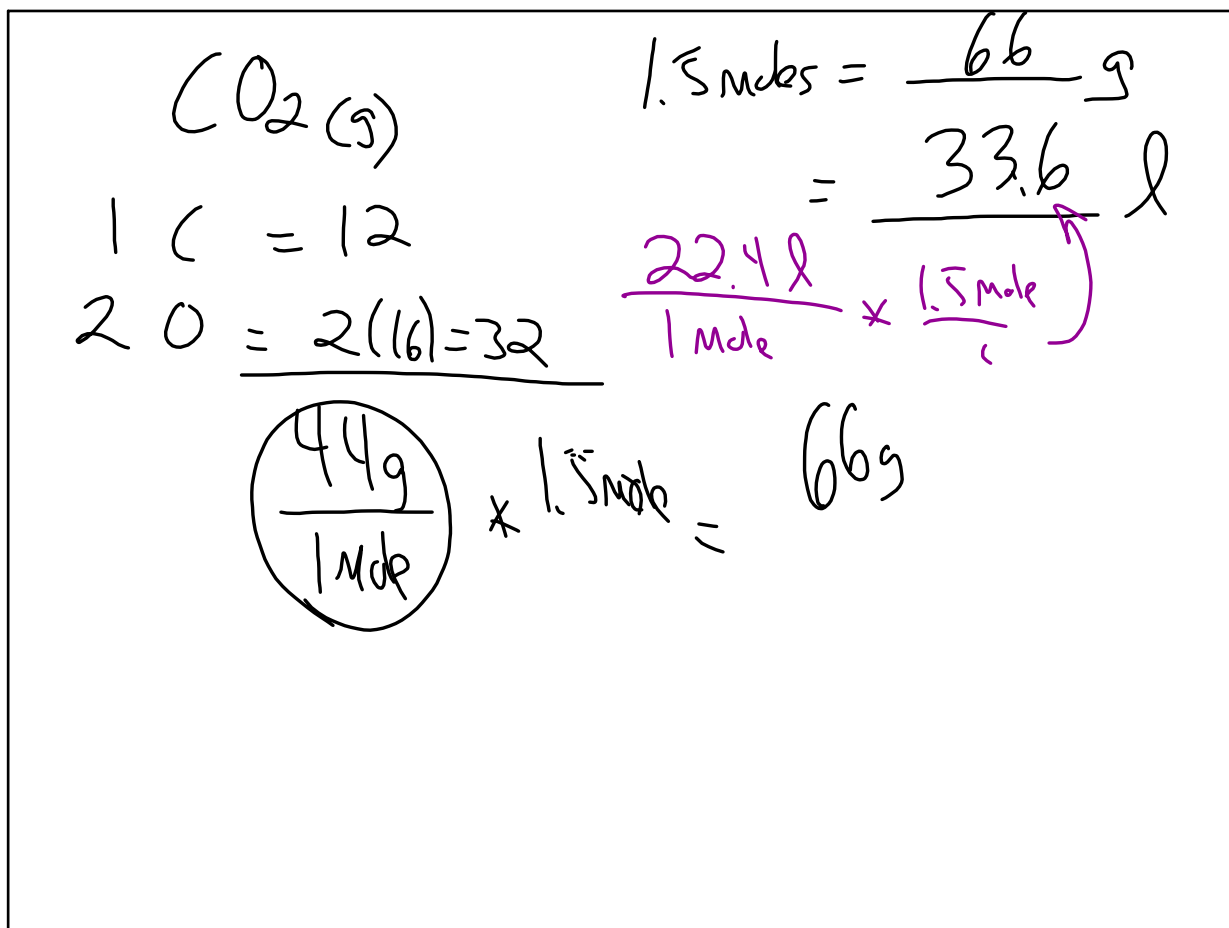
$\% \text{H}_2\text{O} = \frac{90}{250} \times 100 = 36\% \text{H}_2\text{O}$

Aug 1-11:47 AM

1 Mole

$6 \times 10^{23}$  atoms of an element  
 $6 \times 10^{23}$  molecules of a compound.  
 MASS in grams at P.T.  
 $22.4 \text{ l}$  of any GAS

Aug 1-11:50 AM



Aug 1-11:52 AM