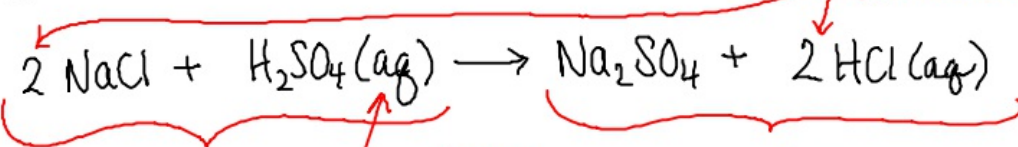


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## Chemical Reactions (Chm Rxn)



reactants

yields

products

Balance the equation  
Coefficients

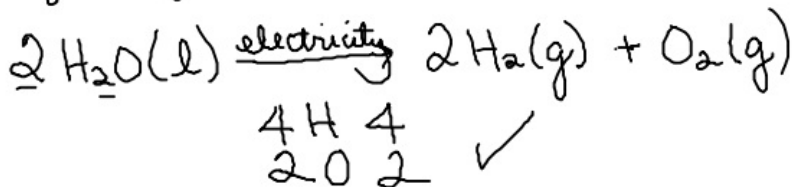
State of matter

(s) solid (l) liquid (g) gas  
(aq) aqueous (ppt) precipitate

Coefficients balance equations

Subscripts balance formulas

- if both are present multiply these together to determine quantity.



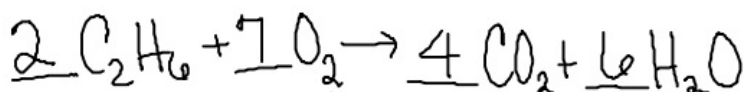
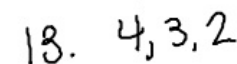
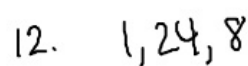
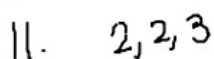
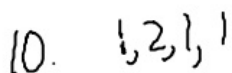
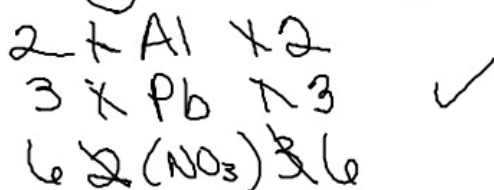
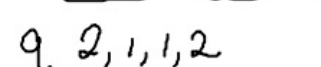
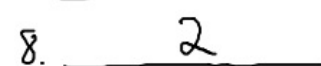
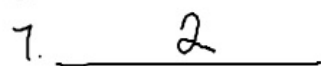
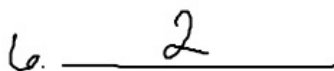
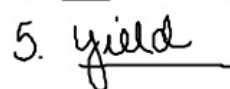
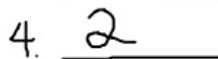
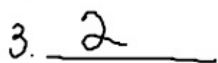
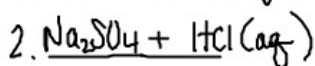
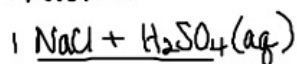
Law of Conservation of matter - matter can not be created or destroyed - it can only change form



Steps to writing a balanced equation:

- ① record balanced formulas (based on names)
- ② balance equations using coefficients
- ③ Doublecheck work - did you include catalysts or state of matter

Practice:



↑  
# of oxygen  
must be even

Combustion of a hydrocarbon  
always produce  $\text{CO}_2 + \text{H}_2\text{O}$

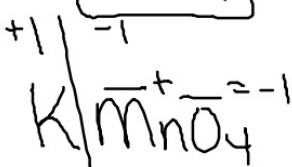
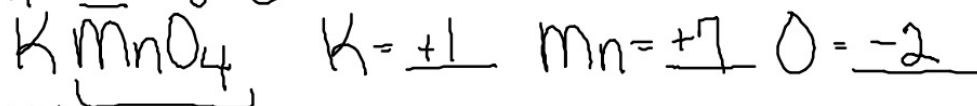
## Oxidation #

① Any pure element is zero (<sup>ex</sup>Mg, Br<sub>2</sub>, O<sub>2</sub>)

② if given an ion the oxidation #  
puts +/- in front      B<sup>3+</sup>      B = +3

③ only ONE element can be negative  
(often oxygen)

$$+1 + \underline{\quad} + -8 = 0$$



$$+3 | -3$$

