Combustion

Complete	__ + O2 --> CO2 + H2O
Incomplete	__ + O2 --> CO + H2O
	__ + O2 --> C + H20

Balance Carbon > Hydrogen > (Multiply everything except O2 by 2) and then balance Oxygen

Alkane & Ether

Halogenation

Alkene	H2C=CH2 +Br2 --> CH2(Br)CH-2(Br)
Alkyne	same as Alkene, but requires twice as many moles to break 2 out of the 3 bonds

Br2 or Cl2

Addition of Simple Acids

Alkene	CH2=CH2+HCl --> CH3-CH2(Cl)
Alkyne	Same as Alkene, but requires twice as many moles to break 2 out of the 3 bonds

HBr or HCl

Markovnikov's Rule: the rich gets richer (Hydrogen goes to Carbon with more Hydrogens already)

Hydrogenation

Alkene	CH2=CH2 +H2 --> CH3-CH3
Alkyne	Same as Alkene, but double H2 (to break 2 out of 3 bonds)
Aldehyde	CH2(O) + H2--> CH3(OH)
Ketone	CH3C(O)CH3 + H2-->CH3C-H(OH)CH3

+H2 & Catalyst (Pt,Pd,Ni)

Alkene + H2 --> Alkane
Alkyne + *2* (H2) --> Alkane
Aldehyde + H2 --> Primary Alcohol
Ketone + H2 --> Secondary Alcohol

Break double bond and add Hydrogen

Hydration

Alkene	CH2=CH2 + H-OH --> CH3-CH-2(OH)
Alkyne	same as Alkene, but 2 times the reagent (H2O)

+H2O & Acid Catalyst (H2SO4)

Markovnikov's Rule: the rich get richer

Alkene + H2O-->Alcohol
Alkyne + H2O-->Alcohol

Polymerization

Addition	CH2=CH+CH=CH2-->CH2-C-H2-CH2-CH2

Addition: linking together many **ALKENE** molecules through addition reactions

Addition Polymer formed by the reaction of 2 *different* monomers- **Copolymer**

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