p. 219 #1-5

bread + peanut butter → PB sandwich

#3. a) $CaCl_2 + Na_2SO_4 \rightarrow CaSO_4 + NaCl$

$Ca^{2+}Cl^-$ $Na^+SO_4^{2-}$ $Ca^{2+}SO_4^{2-}$ Na^+Cl^-

Calcium chloride + Sodium Sulfate → Calcium Sulfate + Sodium chloride

reactants products

4. a) Sugar + oxygen → Carbon dioxide + water

b) Calcium bicarbonate → Calcium Carbonate + Carbon dioxide + water

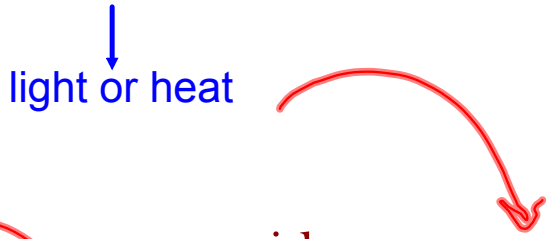
2 + 3 = 5

3 + 2 = 5

Types of Chemical Reactions

I. Combustion

The reaction of a substance with oxygen to produce oxides and energy.



Ex. fuel + oxygen ⇒ oxides + energy

$+ O_2$

Complete Combustion

Substance being 'burned' completely.

For hydrocarbons, the products will always be carbon dioxide and water vapour.

Ex. butane + oxygen ⇒ carbon dioxide + water vapour

$2C_4H_{10} + 13O_2 \rightarrow 8CO_2 + 10H_2O$

Complete

propane + oxygen →

Incomplete

propane + oxygen →

Incomplete Combustion

Occurs when there is not enough oxygen available to burn a substance completely.

For hydrocarbons, the products will be carbon dioxide, carbon monoxide, carbon and water vapour.

Ex. butane + oxygen $\Rightarrow$ carbon dioxide + carbon monoxide + carbon + water

$$C_4H_{10} + 4O_2 \longrightarrow CO_2 + CO + 2C + 5H_2O$$

Read p. 230-232

#1-5