Quiz - Hydrocarbons

Reactions

cracking - reaction in which hydrocarbons are broken into smaller fragments

• this reaction occurs in the absence of air, and with a catalyst or heat, to speed up the reaction.

Ex.
$$C_{17}H_{36(l)} \longrightarrow C_9H_{20(l)} + C_8H_{16(l)}$$

*atoms must be conserved!

reforming - reaction in which large molecules are formed from smaller ones

• this reaction normally occurs with the help of a catalyst or heat

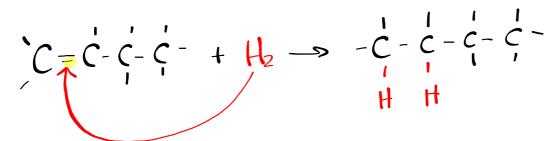
Ex.
$$C_5H_{12(l)} + C_5H_{12(l)} \longrightarrow C_{10}H_{22(l)} + H_{2(g)}$$

combustion - a reaction between a compound and oxygen to produce the most common oxides.

Ex.
$$2C_8H_{18(l)} + 25O_2$$
 \longrightarrow $16CO_{2(g)} + 18H_2O_{(g)} + energy$ "burning"

addition (hydrogenation) reaction - a reaction in which an <u>unsaturated</u> molecule reacts with hydrogen (diatomic).

Ex.
$$C_4H_8$$



Additional Questions

For each of the following, draw a structural diagram equation, name the products and classify the equation:

1. Methylbenzene is burned in a waste disposal plant.

2. 3-methyl-1-butyne + excess hydrogen

3. Propane and butane are reacted in the presence of hydrogen to make several gasoline molecules.