## Worksheet 47 - Questions?



1) 2,3-dimethy/butane

## **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

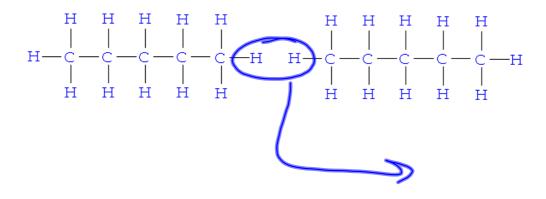
Ex. 
$$C_5H_{12(1)} + C_5H_{12(1)} \longrightarrow C_{10}H_{22(1)} + H_{2(g)}$$

**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"

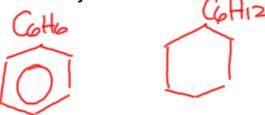
**addition (hydrogenation) reaction** - a reaction in which an unsaturated molecule reacts with hydrogen (diatomic).

$$C_3H_4 + H_2 \longrightarrow$$
(exass)
$$-C = C - C - + H - H \longrightarrow H - C - C - C - H + H + H$$



## Common Mistakes...

Benzene vs. Cyclohexane



Benzene as a branch (phenyl)

ortho, meta, para-dimethylbenzene

dimethyl-2-butene

$$-C-C=C-CH_3$$

$$CH_3$$

$$CH_3$$

## Worksheet

Quiz - Tomorrow