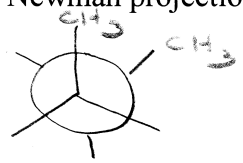
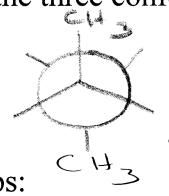
Chapter 3: "Alkanes" Worksheet

1. Draw Newman projections for the three conformers of n-butane ($CH_3CH_2CH_2CH_3$).



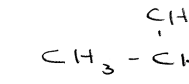
"Gauche"

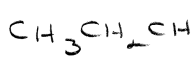


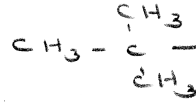
"Anti" (Lowest Energy)

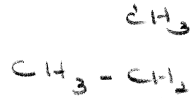
"Eclipsed" (Highest Energy)

2. Name the following alkyl groups:

$(CH_3)_2CHCH_2$-  isobutyl

$CH_3CH_2CH_2$-  n-propyl

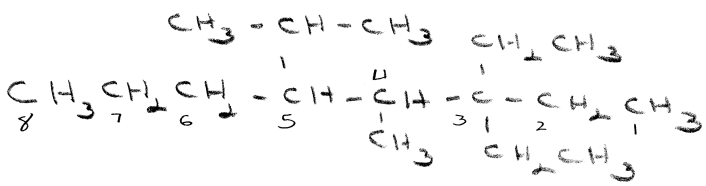
$(CH_3)_3C$-  t-butyl

$CH_3CH_2CHCH_3$  sec-butyl

CH_3CHCH_3  isopropyl

3. Given the following: $CH_3CH_2CH_2CH(CH(CH_3)_2)CH(CH_3)C(CH_2CH_3)_3$

(a) Draw the molecule.



(b) Find and number the longest carbon chain.

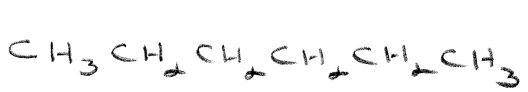
8 "octane"

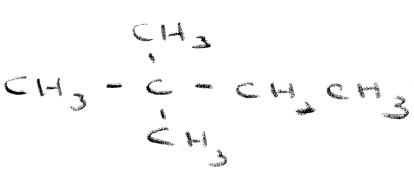
(c) Name this compound.

3,3-diethyl
5-isopropyl
4-methyl

3,3-diethyl-5-isopropyl-4-methyloctane

4. Draw all of the isomers of hexane, $CH_3(CH_2)_4CH_3$.





Also try naming them.....