ALKANES AND ORGANIC STRUCTURES 2 WORKSHEET 2

VERY CHALLENGING!

1. Name the following. Where appropriate/necessary, use the trivial names for branches (*e. g.*, *tert*-butyl etc)

a) (CH3)3C-

b)

c)

2. Newman projections of all possible conformations of 2,3-dimethylpentane looking down the C2-C3 bond. Circle the most stable conformation.

3. Draw sketelal formulas for the following.

a) *trans*-1,2-dimethylcyclohexane b) *cis*-1-isopropyl-3-methylcyclohexane

c) *trans*-1-isopropyl-3-methylcyclohexane d) *cis*-1-isopropyl-4-methylcyclohexane

e) *trans*-1-isopropyl-4-methylcyclohexane

4. Define each of the molecules below as chiral or achiral and identify the chiral carbon(s) in each case



5. Label each chiral carbon in the following compounds as R or S:



6. For each of the following pairs, describe the relationship between them as geometric isomers, enantiomers or the same compound. Where appropriate, assign R or S to all chiral carbons



7. Draw the following molecules indicating carefully the stereochemistry (wedge, dotted etc)

(a) (S)-1-bromo-1-chloropropane

(b) (2R, 3S)-dichloropentane