NAME\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

# \_\_\_\_\_\_\_\_\_\_

**Alkanes**

**Models Lab #2** (staple to the back of the Isomers Lab). Use the wooden kits, if possible. Protractors are available, if needed.

1. Build Cyclopropane. Can it be constructed with the wooden pegs or springs? (circle answer) Draw a representation :
2. Calculate bond angles and record.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Build Cyclobutane. Pegs or springs? Draw:
4. Calculate Bond angles\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. Build Cyclopentane. Pegs or springs? Draw:
6. Calculate Bond angles\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
7. Build Cyclohexane. Pegs or springs? Draw:
8. What is the nonplanar shape of #7 commonly called (see p. 345)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
9. Calculate Bond angles of #7\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
10. Which of the above structures have bond angles with the normal tetrahedral values? (See book for help)
11. Which of the above structures are the most unstable and why?
12. Build the following: aminochlorohydroxylethane (aminochloroethanol),. Draw the structure, displaying the 3-D geometry, below.
13. Build the enantiomer of #12. Draw above (right) & get initialed. Label the chiral carbon in each.
14. What is a chiral carbon?

15. Build the following and draw below: bromochloromethane. Does it have an enantiomer? Explain