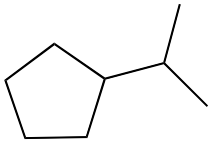
Recitation Week 6 **KEY** 2/20/13

1. Draw the molecules with these names:

(c) 1-octen-7-yne (d) *cis*-3-hexene (e) *trans*-3-hexene

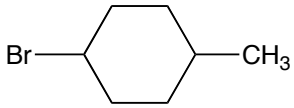
2. Name these molecules

(a)



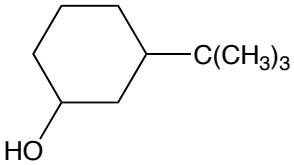
isopropylcyclopentane
***or* (1-methylethyl)cyclopentane**

(b)



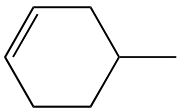
1-bromo-4-methylcyclohexane

(c)



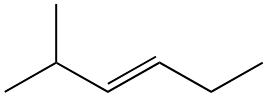
3-*tert*-butylcyclohexanol
***or* 3-(1,1-dimethylethyl)cyclohexanol**

(d)



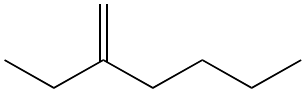
4-methylcyclohexene

(e)



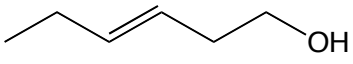
2-methyl-3-hexene

(f)



2-ethyl-1-hexene

(g)



3-hexen-1-ol

(h)

$CH_3CH_2CH_2CH_2C{\equiv}CCH_3$

2-heptyne

3. How many degrees of unsaturation would a molecule with each of these formulas have? Draw or name an example of a compound with each formula.

(a) C_6H_{12} (b) C_4H_6 (c) $C_{10}H_{22}$

1, *e.g.* hexene, cyclohexane **2, *e.g.* butyne, butadiene** **0, decane**

(d) C_4H_8O (e) $C_5H_8Cl_2$

1, cyclobutanol, an aldehyde or ketone **1, *e.g.* dichlorocyclopentane**

4. The following compounds have been named incorrectly. Draw each molecule, and then give its correct IUPAC name.

(a) 4-bromo-3-pentanol

2-bromo-3-pentanol

(b) 5-methylcyclohexanol

3-methylcyclohexanol

(c) 2-ethylpentane

3-methylhexane

(d) 2-methyl-2-penten-4-ol

4-methyl-3-penten-2-ol

(e) 5-(2,2-dimethylethyl)decane

5-(2-methylpropyl)decane, *or* 5-isobutyldecane (common name)

5. Draw Newman projections looking down the C_2–C_3 bond showing the most stable conformations of each of the following:

(a) propane

(b) butane

(c) pentane

(d) 2-methylbutane