ORGANIC PROBLEM SET 1

- 1. Draw the structures to **show** all the bonds and **name** the *functional group*(*s*) in each of the following:
 - (a) CH₃CONHCH₃ (b) (CH₃)₂CHCOOCH₂CH₃ (c) BrCH₂CH₂COCH(CH₃)₂

$$(d) \qquad (e) \qquad CH_3 \qquad CH_3 \qquad N \qquad CHO$$

- 2. Draw the structures of **all** compounds of molecular formula $C_3H_6Br_2$.
- 3. Give IUPAC names for:

(a)
$$CH_3 \cdot C \equiv CCHCH_3$$
 (b) $CH_2 \cdot CH_3$ (c) $CH_2 \cdot CH_3$ (b) $CH_2 \cdot CH_3 \cdot CH_3$

(c)
$$CH_3$$
 CH_3 CH_3 CH_3 CH₂CH₂CHCHCH₂CH₃ CH_3 CH_3 CH_4 CH₂CH₂CH₂CH₃ CH_4

- 4. Draw structural formulas for:
 - (a) 3,4,4,5-tetramethylheptane
 - (b) 4-ethyl-1-octyne
 - (c) 3-chlorocyclohexene
 - (d) cis-2-methyl-3-nonene
- 5. Indicate which of the following show geometric (*cis-trans*) isomerism, and **draw** all of the *cis-trans* isomers:
 - (a) 1,1-dichloroethene
 - (b) 2-methyl-2-butene
 - (c) 1-pentene
 - (d) 2,4-hexadiene
 - (e) 1-chloro-2-methyl-2-butene
 - (f) 1-chloropropene
 - (g) 4-ethyl-3-methyl-3-hexene
 - (h) 1-chloro-3-methylcyclohexane

(i) 2-bromo-1,1-dichlorocyclopentane