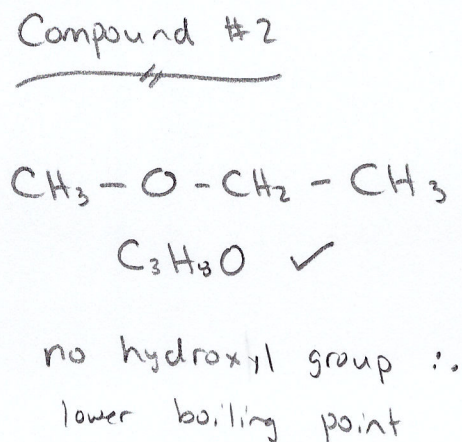
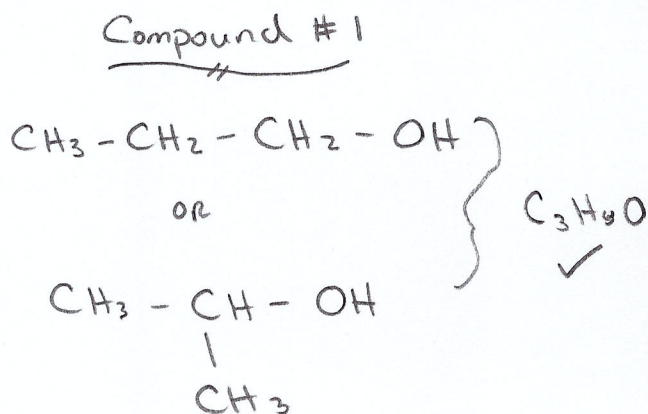


## Structural Isomers

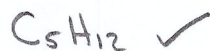
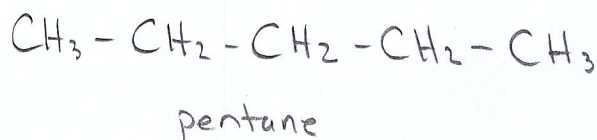
- Compounds can have identical molecular formulas, but have different properties due to different arrangement of atoms and bonds
- Consider  $C_3H_8O$ 
  - One compound has a boiling point of  $82.5^\circ C$  and another compound has a boiling point of  $7.4^\circ C$ . The first compound must have an atom arrangement that allows for strong intermolecular forces (ie. hydrogen bonding).



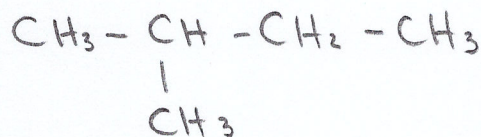
hydroxyl group  $\therefore$   
high boiling point

- Structural isomers** are any two or more compounds that have the same molecular formula but different structural formulas
  - This means the molecule has the same number and type of elements/atoms (ie. same molecular formula), but can be drawn in different ways (ie. different structural formulas)

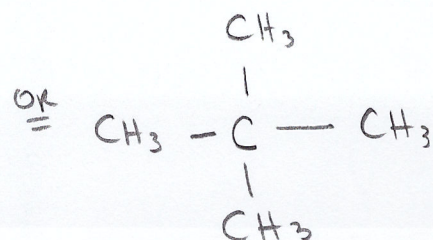
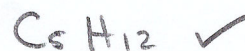
EXAMPLE: Draw and name the three structural isomers for the alkane molecule  $C_5H_{12}$ .



or



2-methylbutane



2,2-dimethylpropane

\*\*\*Now try pg. 574 #3, 4\*\*\*