

**CLUTCH**

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**CONCEPT: CARBON**

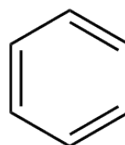
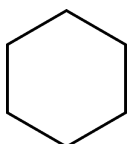
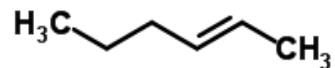
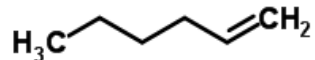
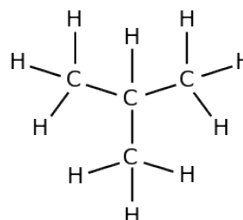
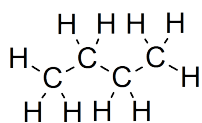
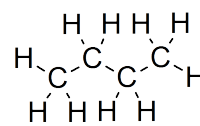
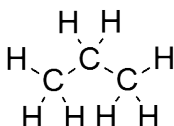
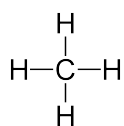
Carbon is the basis of organic molecules, and life.

**EXAMPLE:**



- Hydrocarbons are organic molecules made exclusively of hydrogen and carbon.

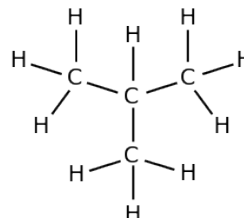
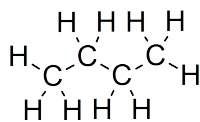
**EXAMPLE:**



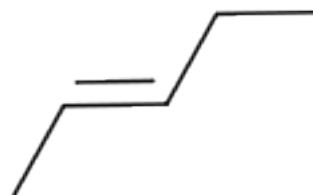
**CONCEPT: CARBON**

**Isomers** – compounds with the same number of atoms of the same element, but different structures and properties

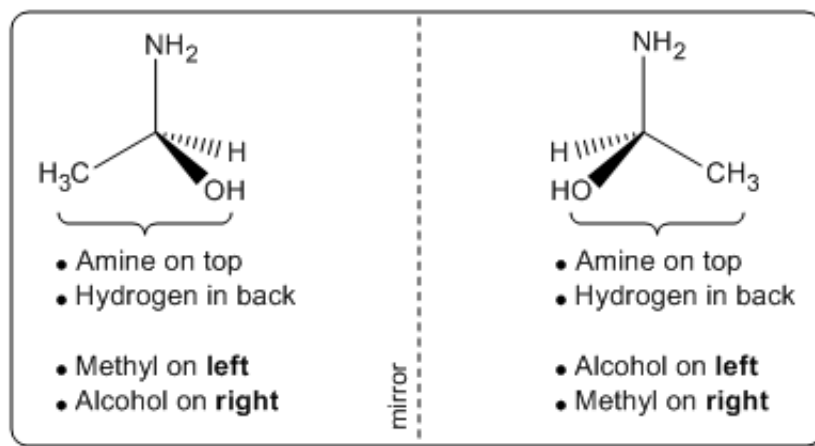
- **Structural isomers** – differ in bonded arrangements of their atoms

**EXAMPLE:**

- **cis-trans isomers** – differ due to arrangements at double bonds

**EXAMPLE:**

- **Enantiomers** – molecules that are mirror images of each other

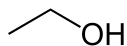
**EXAMPLE:**

**CONCEPT: CARBON**

- Functional groups – chemical groups involved in chemical reactions

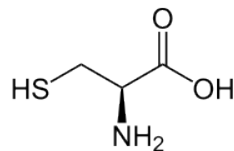
□ Alcohol -OH

**EXAMPLE:**



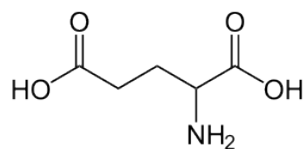
□ Sulfhydryl -SH

**EXAMPLE:**



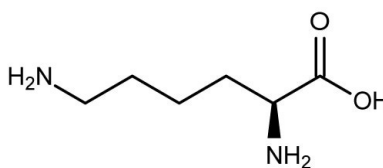
□ Carboxylic Acid -COOH

**EXAMPLE:**



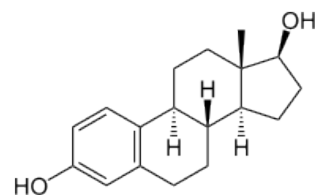
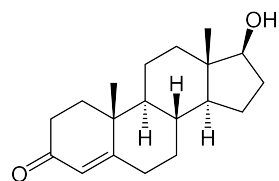
□ Amine -NH2

**EXAMPLE:**



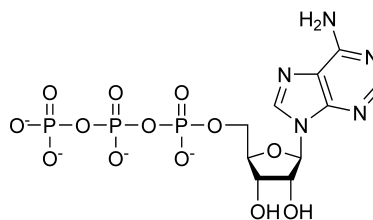
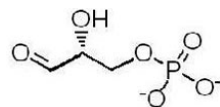
□ Methyl -CH3

**EXAMPLE:**



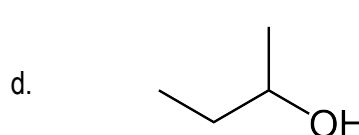
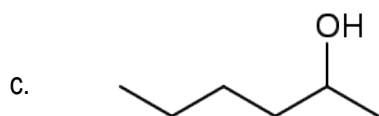
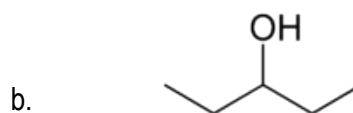
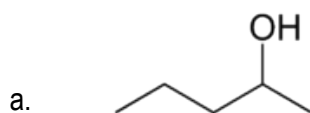
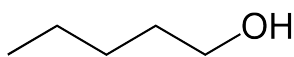
□ Phosphate -PO<sub>4</sub>

**EXAMPLE:**



PRACTICE:

1. Which of the following molecules would be considered a structural isomer of this molecule (pentanol)?



2. Which of the following isomers is *cis*, and which is *trans*?

