

CLUTCH

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CONCEPT: CARBON

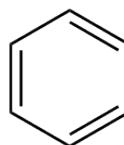
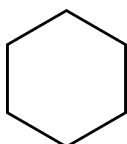
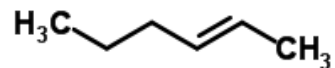
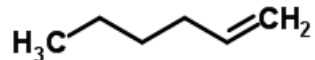
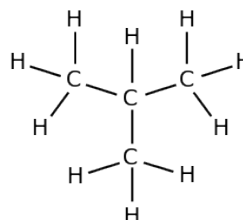
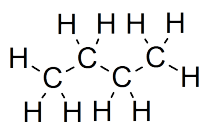
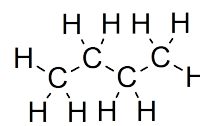
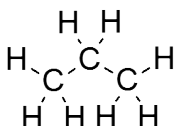
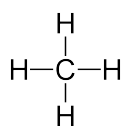
Carbon is the basis of organic molecules, and life.

EXAMPLE:



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

EXAMPLE:

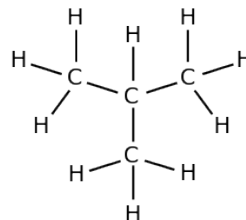
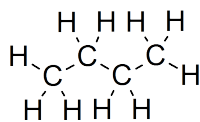


CONCEPT: CARBON

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

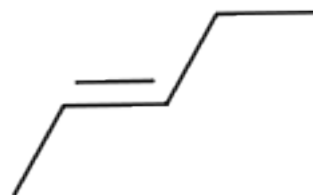
- **Structural isomers** – differ in bonded arrangements of their atoms

EXAMPLE:



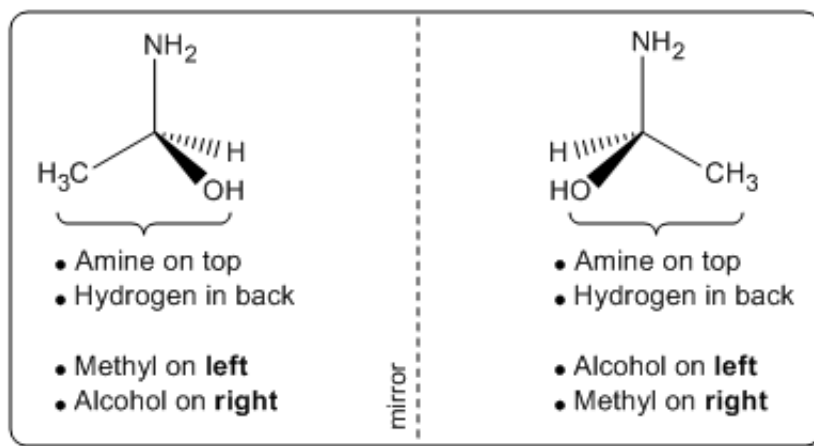
- **cis-trans isomers** – differ due to arrangements at double bonds

EXAMPLE:



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

EXAMPLE:

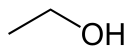


CONCEPT: CARBON

- Functional groups – chemical groups involved in chemical reactions

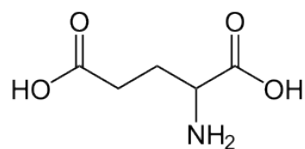
□ Alcohol -OH

EXAMPLE:



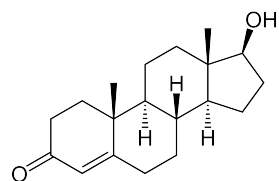
□ Carboxylic Acid -COOH

EXAMPLE:



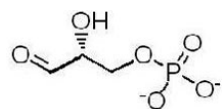
□ Methyl -CH₃

EXAMPLE:



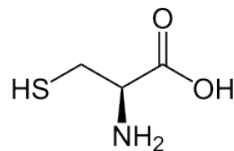
□ Phosphate -PO₄

EXAMPLE:



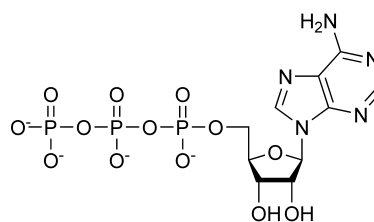
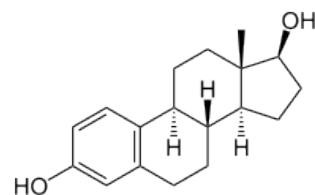
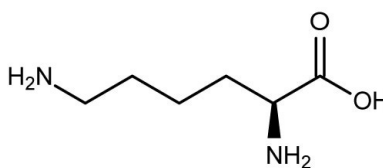
□ Sulfhydryl -SH

EXAMPLE:



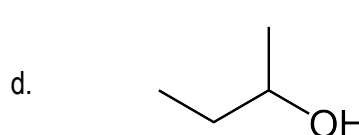
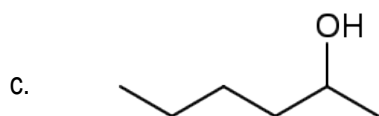
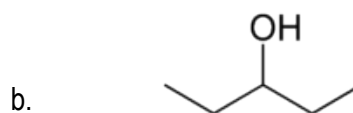
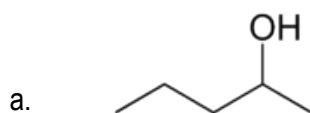
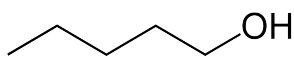
□ Amine -NH₂

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*?

