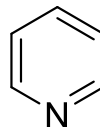
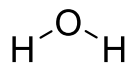
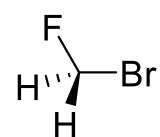
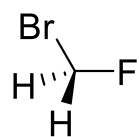
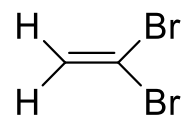
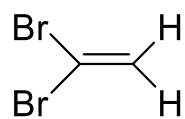


Same or Different Molecules?

If *different* \Rightarrow *isomers*?

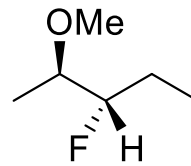
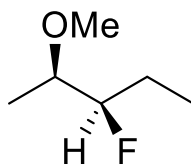
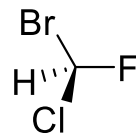
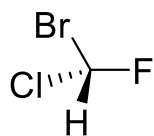
If *isomers* \Rightarrow *structural* or *stereoisomer* ?...etc.





Same or Different?

Page 2



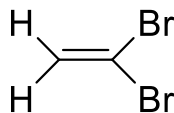
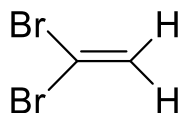
Same or Different?

Page 3

Same or Different?

We employ the test of *superimposability* (*superposability*).

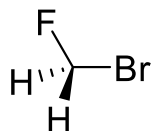
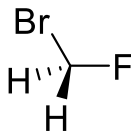
If two molecules can be *superimposed* and have everything match up, then they are the **same**.



Superimposable.

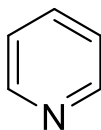
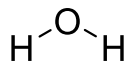
(180° rotation or vertical axis reflection)

Molecules are the *SAME*.

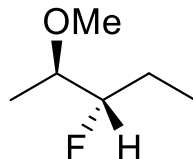
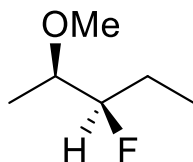


Superimposable.

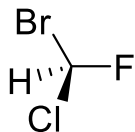
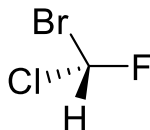
Molecules are the *SAME*.



Non-superimposable.
 (Not even isomers!)
 Molecules are *DIFFERENT*.



Non-superimposable.
 (*Diastereomers*)
 Molecules are *DIFFERENT*.



Non-superimposable.
 (*Enantiomers*)
 Molecules are *DIFFERENT*.