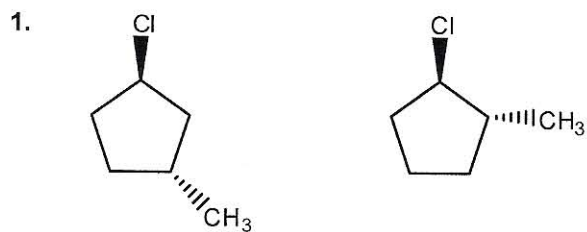


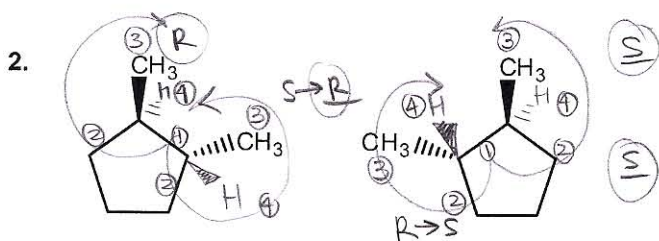
Chapter 5 Worksheet 3

Label each of the following pairs as identical, structural isomers, enantiomers, diastereomers, or conformational isomers, or different compounds



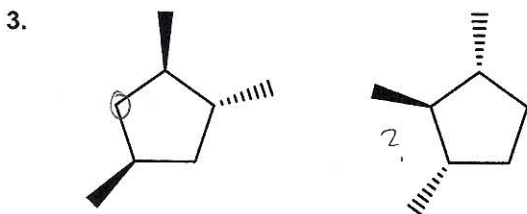
structural

• different connectivity



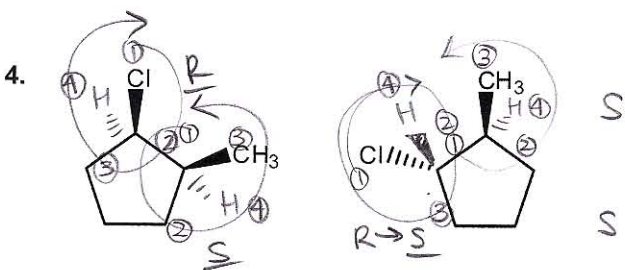
enantiomers

• non superimposable mirror images  
• both R+S changed  
R → S  
R → S



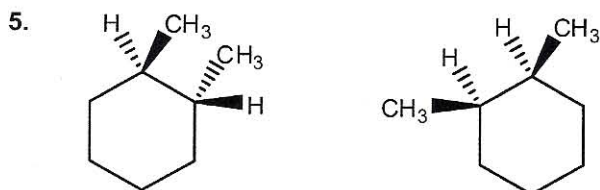
structural

• different connectivity



diastereomers

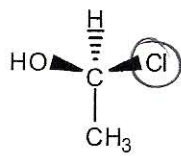
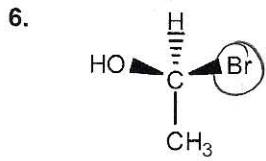
• not mirror images  
• some changed + some didn't w/ regards to R+S  
CH<sub>3</sub>: S → S  
Cl: R → S



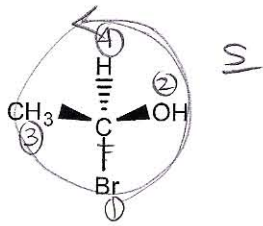
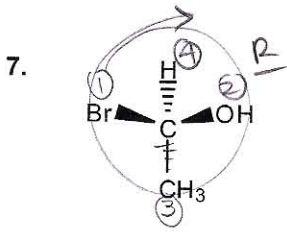
diastereomers

• not mirror images  
• w/ R+S, some changed some didn't

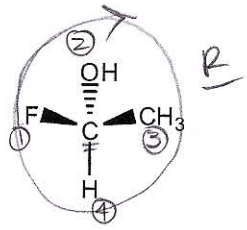
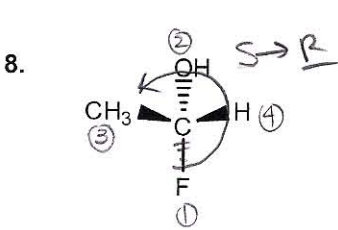
note:  $\neq$  can be either identical or enantiomers ONLY



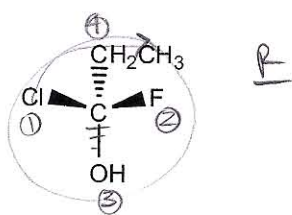
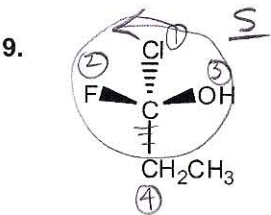
different compounds



enantiomers

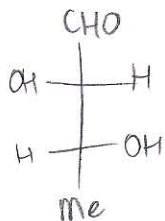
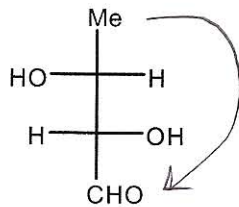
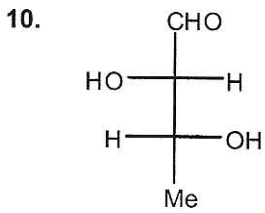


identical

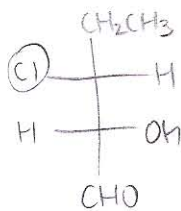
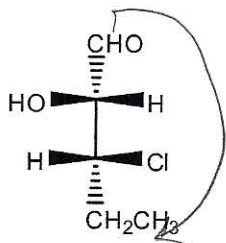
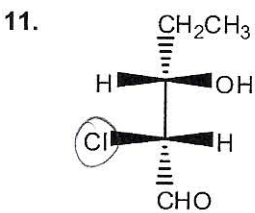


enantiomers

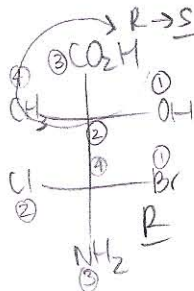
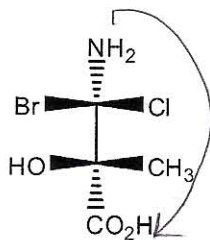
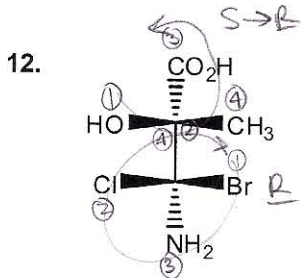
note: fischer projections can only be rotated 180°



identical

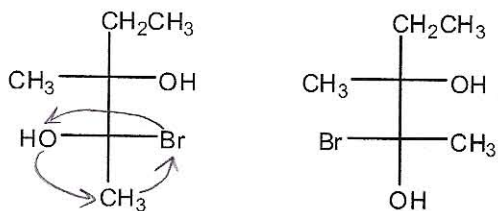


structural



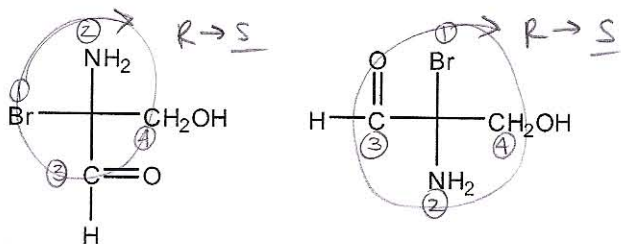
diastereomers

13.



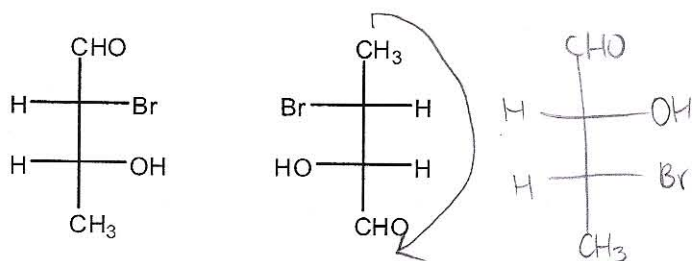
conformational

14.



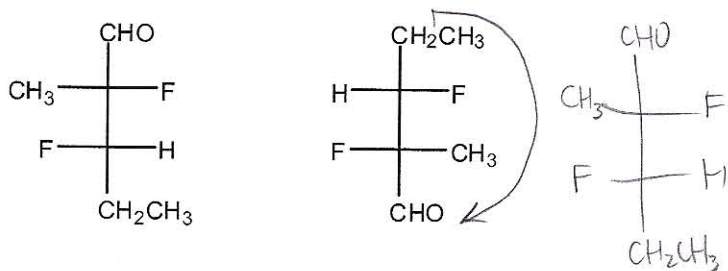
identical

15.



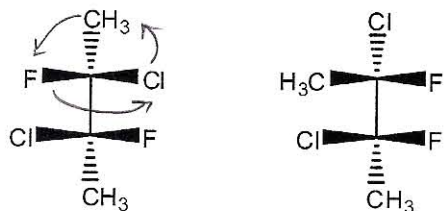
structural

16.



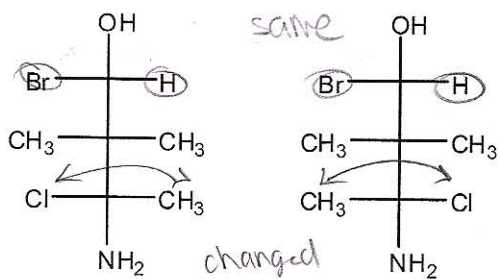
identical

17.



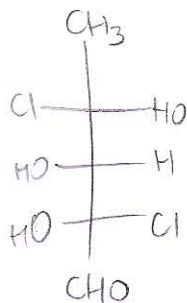
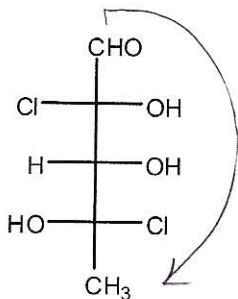
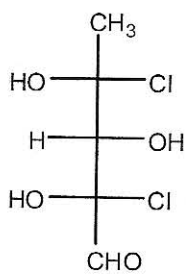
conformational

18.



diastereomers

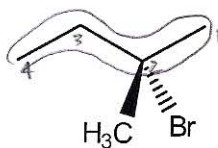
19.



diastereomers

Give an acceptable IUPAC name for the following compounds.

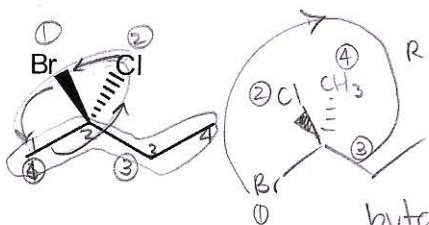
20.



butane  
2-bromo  
2-methyl

2-bromo-2-methylbutane

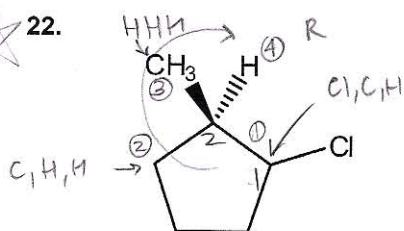
21.



butane  
(2R)  
2-bromo  
2-chloro

(2R)-2-bromo-2-chlorobutane

22.

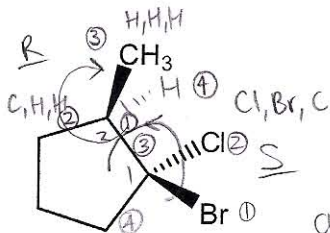


cyclopentane  
(2R)  
2-methyl  
1-chloro

(2R)-1-chloro-2-methylcyclopentane

\* when you can # both ways  
+ it fails, use alphabet  
• chloro  
• methyl

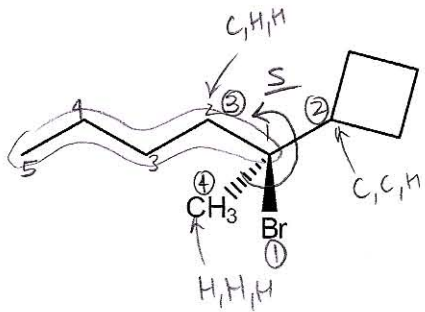
23.



cyclopentane  
(1S, 2R)  
1-chloro  
1-bromo  
2-methyl

(1S, 2R)-1-bromo-1-chloro-2-methylcyclopentane

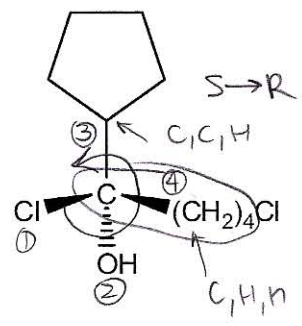
24.



**(1S)-1-bromo-1-cyclobutyl-1-methylpentane**

pentane  
 (1S)  
 1-cyclobutyl  
 1-bromo  
 1-methyl

25.

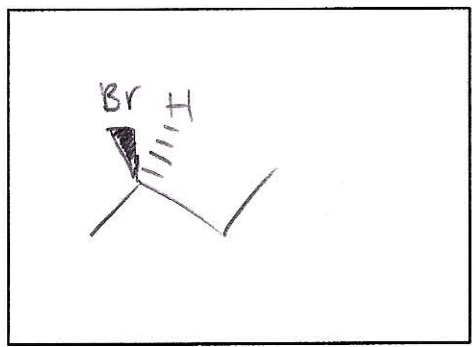
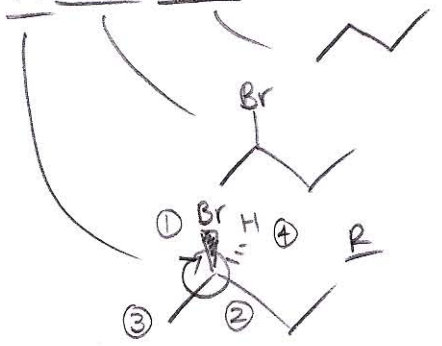


**(1R)-1,5-dichloro-1-cyclopentyl-1-hydroxypentane**

pentane  
 (1R)  
 1-chloro  
 1-hydroxy  
 1-cyclopentyl  
 5-chloro  
 1,5-dichloro

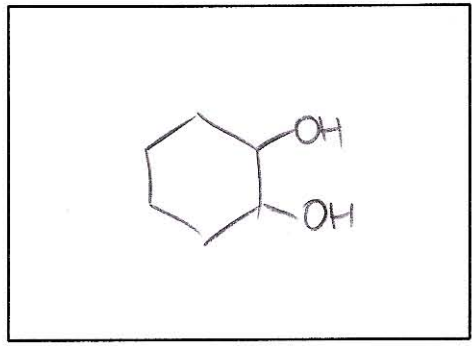
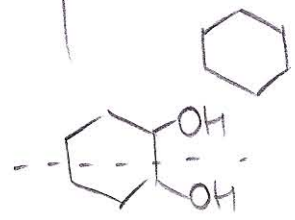
Draw a line angle structure for the given compounds marked with a \*. Draw the remaining structures in Fischer projection form.

26. (R)-2-bromobutane



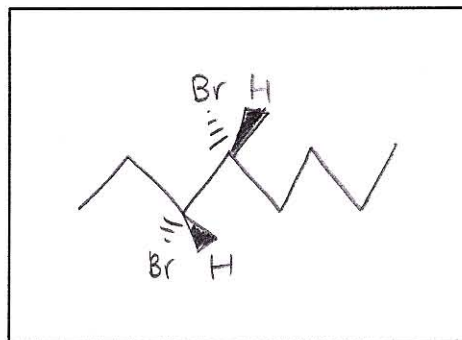
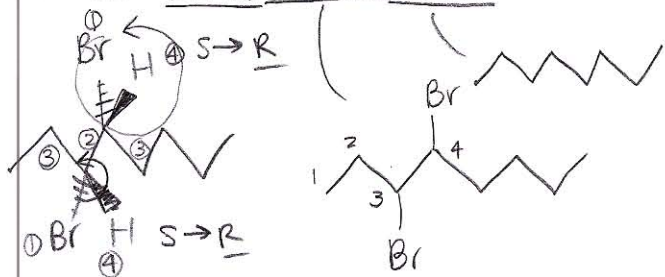
27.\* Meso-1,2-dihydroxycyclohexane

means it has internal symmetry

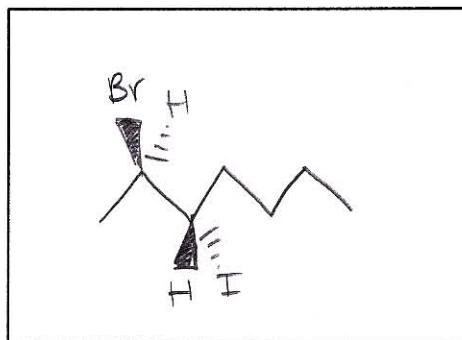
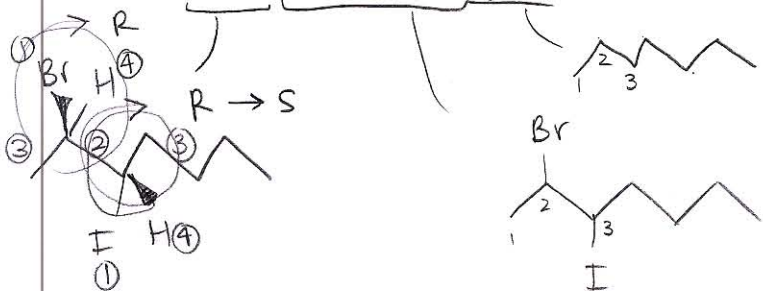




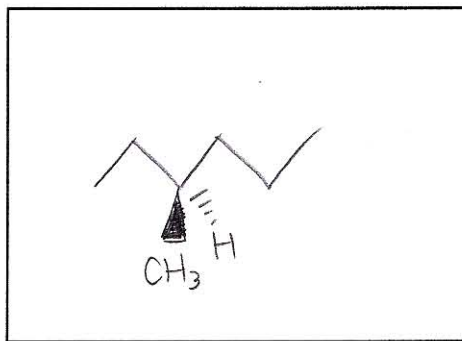
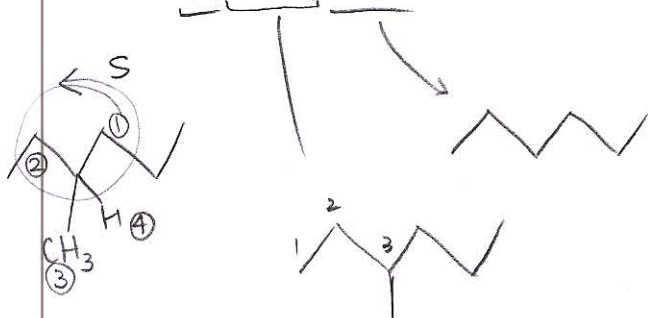
28. (3R,4R)-3,4-dibromooctane



29.\* (2R,3S)-2-bromo-3-iodoheptane



30.\* (S)-3-methylhexane



31. (2S,3R)-2,3-dibromopentane

