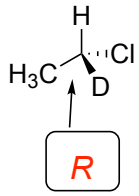
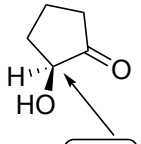
CHEM 2511 (Myers) Quiz 3 October 1, 2025 Name Key

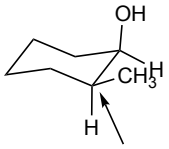
1. (9 pts) Assign the absolute stereochemical configuration (***R*** or ***S***) for each of the indicated stereogenic centers.



R

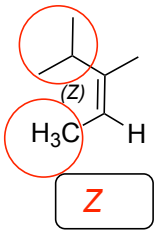


S

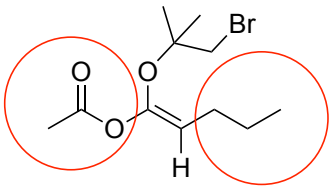


S

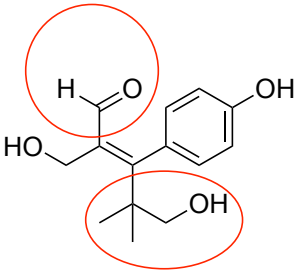
2. (9 pts) Label the following alkenes *E* or *Z*



Z

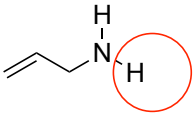


E



E

3. (5 points) For each of the compounds below 1) circle or draw in the most acidic hydrogen
2) enter an approximate pKa value



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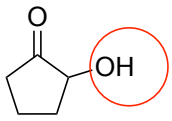
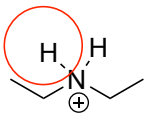
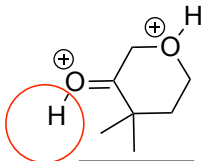


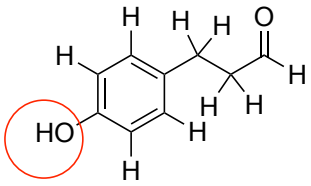
16



10



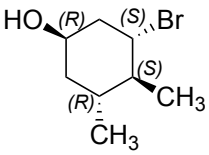
–7

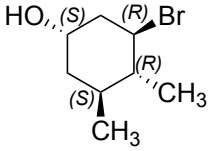


10

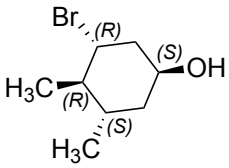
YOU NEED TO LEARN THESE!

4. (5 pts) Draw the enantiomer and a diastereomer of the following compound and give total number of stereiosomers possible

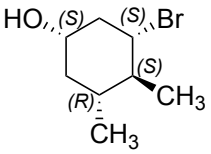




OR



enantiomer



+ 13 other options!

diastereomer

total # of possible stereoisomers = $2^4 = 16$

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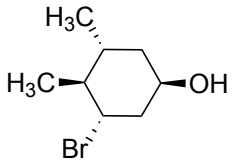
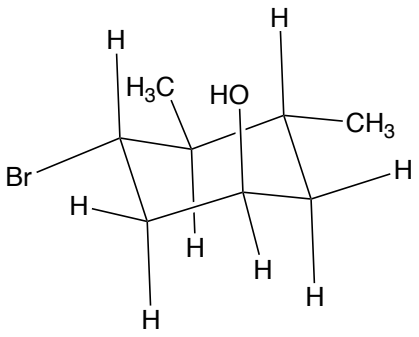
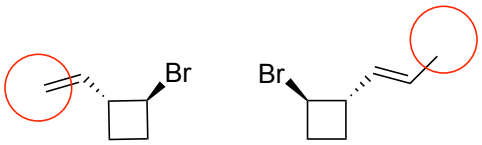
5. (4 pts) Draw the lowest energy chair of the following cyclohexane.

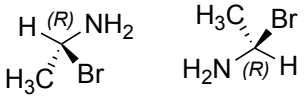




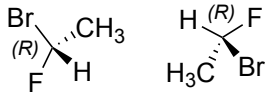
6. (9 pts) For each pair of compounds, label the pair as: unrelated, constitutional isomers (const), or identical (ident).



unrelated



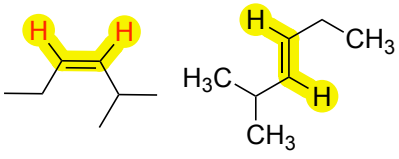
ident.



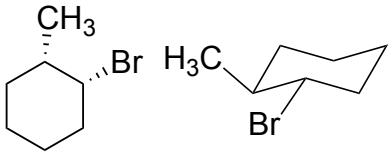
ident.

7. (9 pts) For each pair of compounds, label the pair as: enantiomers (enant.) or diastereomers (diast.)

cis vs *trans* = diastereomers
Z vs E alkene = diastereomers



diast.



diast.

(3*R*,4*R*)-3,4-dimethylhexane

(3*S*,4*R*)-3,4-dimethylhexane

diast.