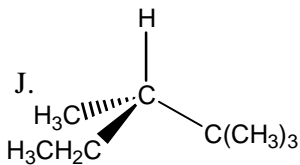
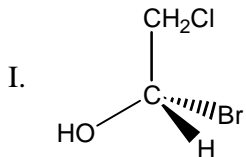
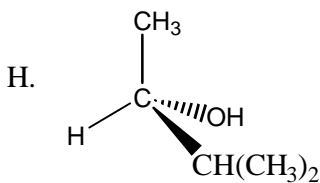
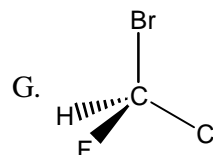
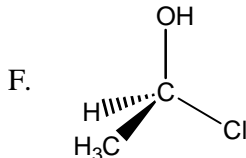
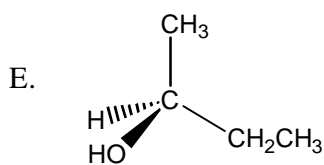
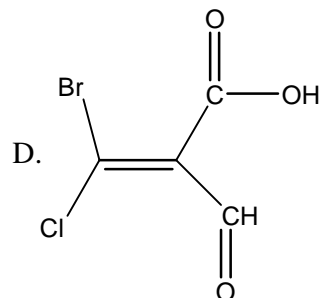
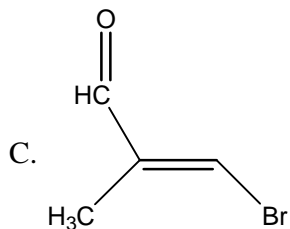
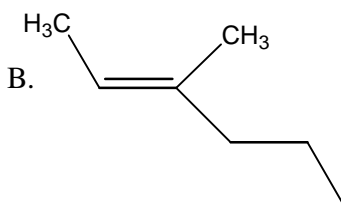
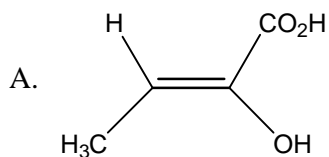
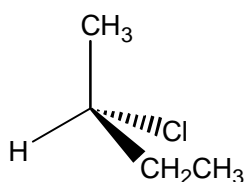
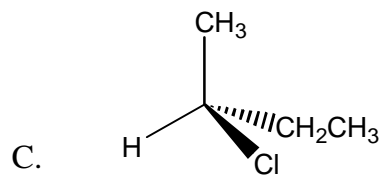
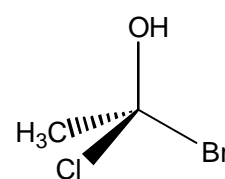
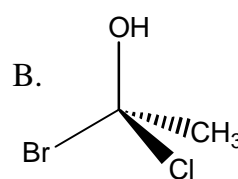
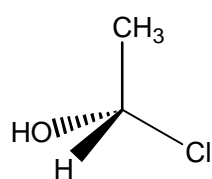
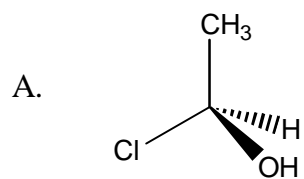


Chem 231: Problem Set #5 (on Chapter 5)

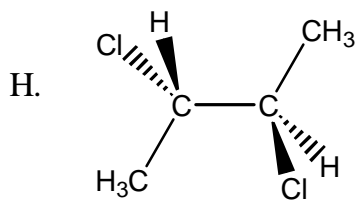
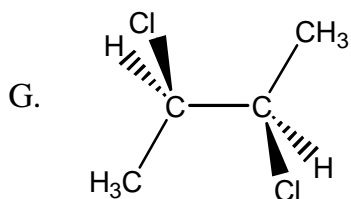
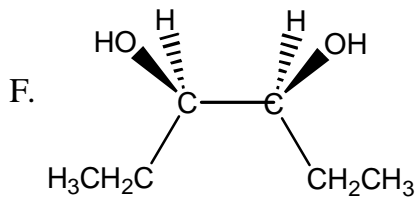
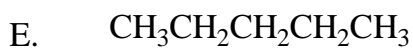
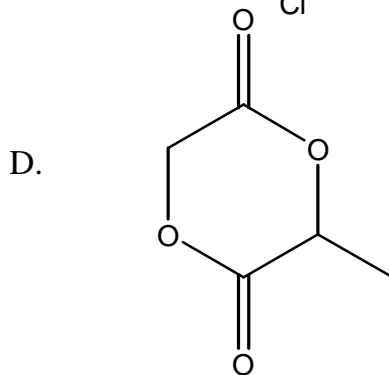
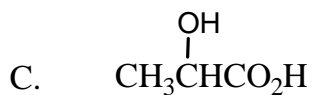
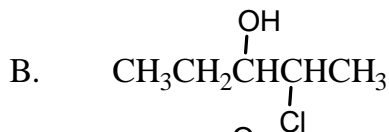
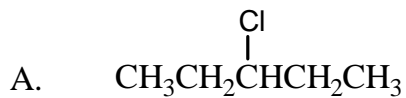
1. Determine the stereochemistry of the following compounds (R, S or E, Z).



2. Are the following pairs identical or enantiomers.

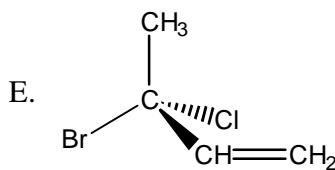
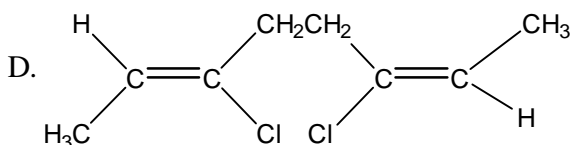
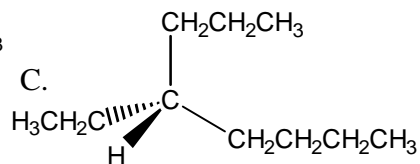
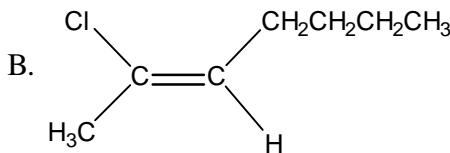
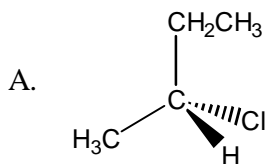


3. For each compound shown below, find and label all stereogenic centers.

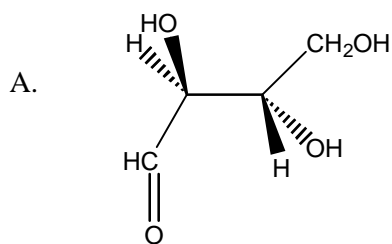


4. Determine if the compounds shown in question #3 are chiral or achiral. Remember: If a compound has a mirror plane of symmetry in any one of its conformations, then it is achiral.
5. Which of the compounds shown in question #3 are meso (i.e. have stereogenic centers but are achiral)?

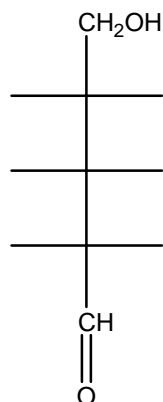
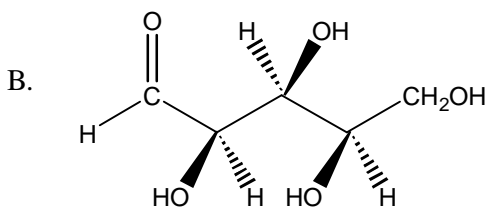
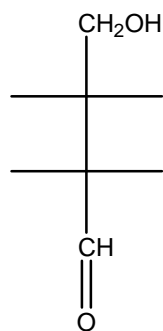
6. Name the following molecules. Include E, Z or R, S designation where appropriate.



7. For the two compounds shown below, complete the Fischer Projections and determine if each stereogenic center is R or S. Also, draw a Fischer projection for the enantiomer of the original compound and label each stereogenic center as R or S. Remember: Free rotation occurs about the C-C single bond.



Fischer Projection



8. Draw structural formula for the molecules indicated below. For A and B, be sure to show the correct arrangement about the double bonds. For C and D, be sure to show the correct three dimensional arrangement about the stereogenic carbon center.

A. (Z)-1-bromo-2-methyl-1-butene

B. (2E,4Z)-2-bromo-5-chloro-2,4-hexadiene

C. (3R)-2,3-dimethylpentane

D. (3S)-3-bromo-3-chloro-1-hexene