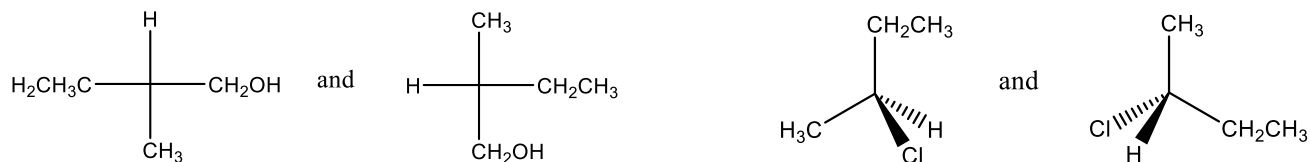


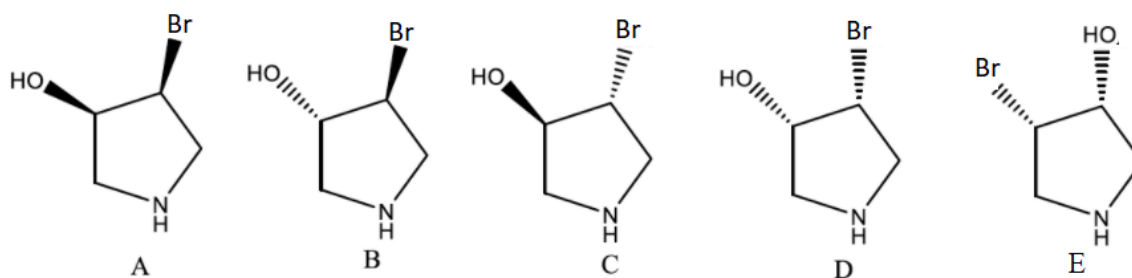
PALOT

Organic Chemistry I – Townsend
Problem-Set #3
Fall 2018

1. Are the following pairs of compounds identical?



2. Consider the following molecules:



A) Which are enantiomers?

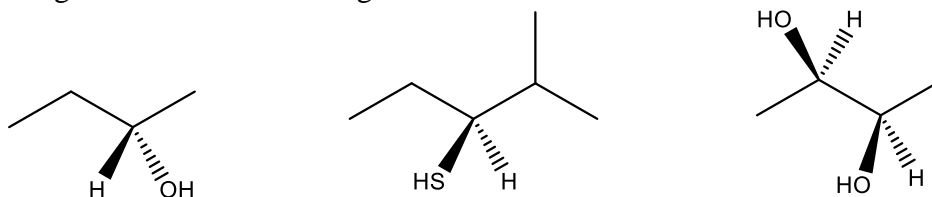
B) Which are identical?

C) What is the stereochemical relationship between molecules A and C?

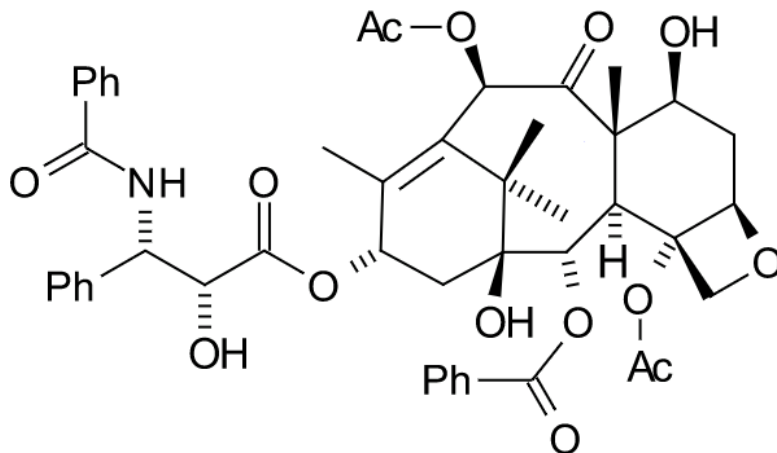
D) How would you change the substituent(s) of A to make it a meso compound?

E) Which of these compounds are optically active?

3. Assign R/S configuration to the following molecules.

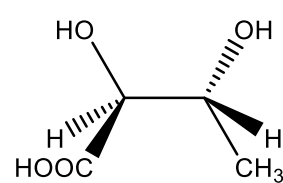
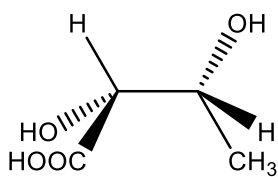
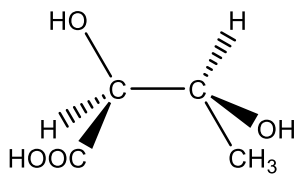
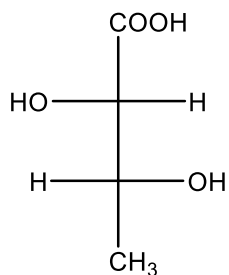


4. Identify the stereocenters and their R/S configurations:

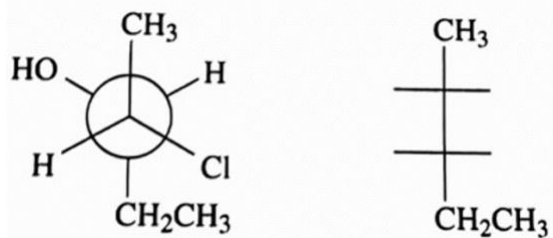


5. A) Draw the Newman projection (in most stable form) and the Fischer projection of (2*R*)-chloropropan-1-ol.

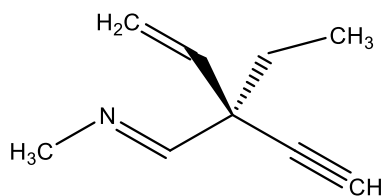
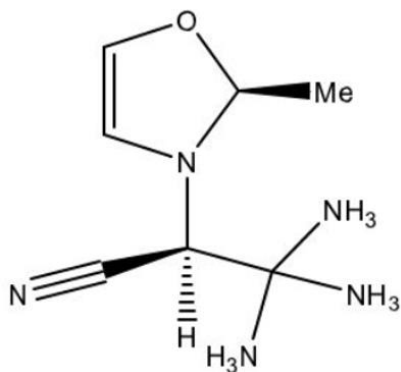
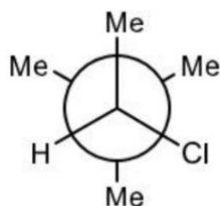
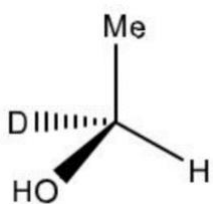
B) Which of the following three perspective formulas depict molecules identical to the Fischer projection shown?



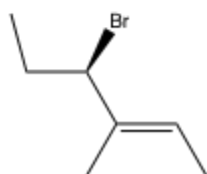
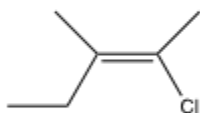
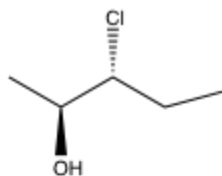
C) Put the remaining groups on the Fischer projection so it represents the Newman projection shown. Is this molecule threo or erythro?



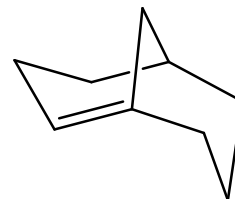
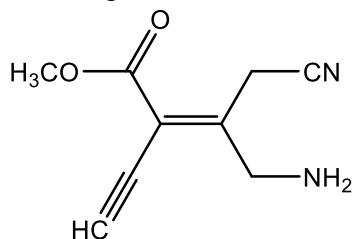
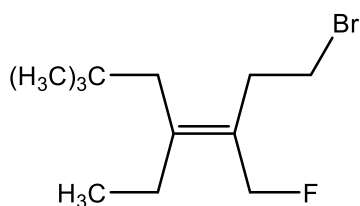
6. For the following molecules, designate R/S configuration at each stereo-center, and indicate if the molecule is chiral or achiral.



7. Give the full IUPAC name for the following molecules:



8. Assign E- or Z- configurations to the following molecules.



PILOT Learning – Tip of the Week

Looking for an adventure? Do you want to get off of campus and into the fresh air? The JHU Outdoors Club (JHOC) has an adventure waiting for you. Trips include backpacking, canoeing, caving, mountain biking and hiking! The best part is trips are free. Check out their website for a schedule of upcoming trips: <http://outdoors.johnshopkins.edu/trips/>