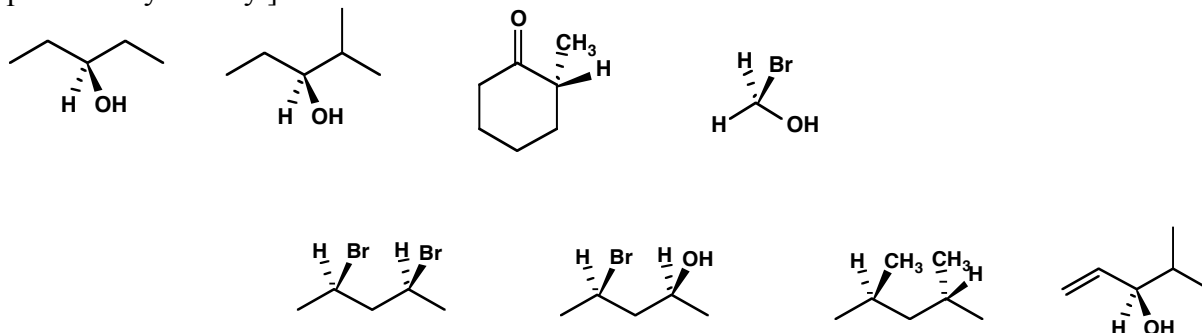


Chapter 5 Quiz, Chem 350,

Due on Friday, October 11

1. For each structure, a) star any chiral carbons, b) label each chiral carbon as (R) or (S) and c) indicate any molecules that are chiral. [Two tools for assigning chirality: chiral carbons and planes of symmetry.]

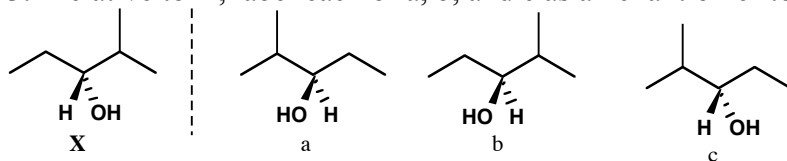


2. Draw the structure for:

a. (R)-3-methylheptane

b. (S)-2-bromopentane

3. Relative to **X**, label each of a, b, and c as an enantiomer to **X** or as the same as **X**.



4. Draw all possible stereoisomers of 1,3-dichlorocyclopentane, and label each structure as **A**, **B** etc. a) Label all chiral C's, b) write "chiral" by chiral isomers, c) write "meso" if appropriate, and d) Classify the relationship between any two structures, for example **A/B enantiomers**, or **A/B diastereomers**, etc.. (For any that are the same, scratch out the duplicate!)

5. Alkenes react with HBr. For example, when $\text{CH}_2=\text{CHCH}_2\text{CH}_3$ reacts with HBr, the product is 2-bromobutane. Q: Is the product chiral? Will a solution of the product be optically active or racemic? Will the (S) isomer only, the (R) isomer only, or both isomers form?