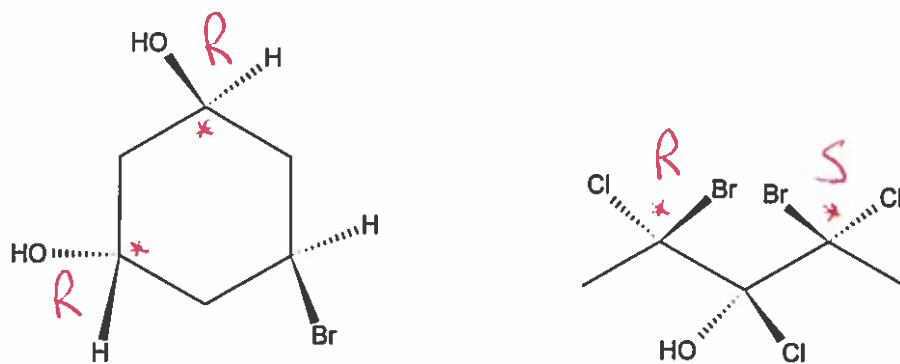
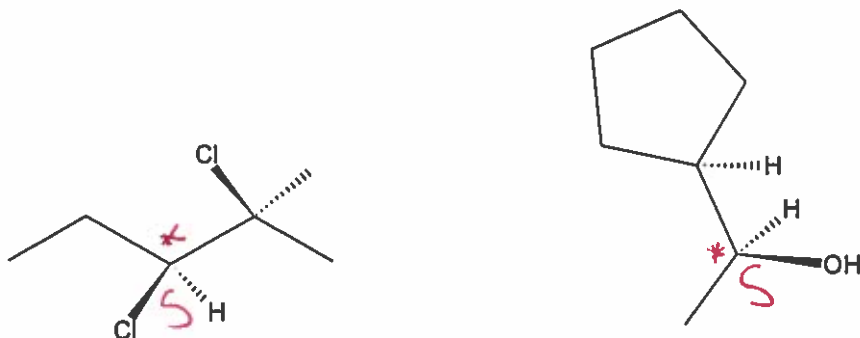
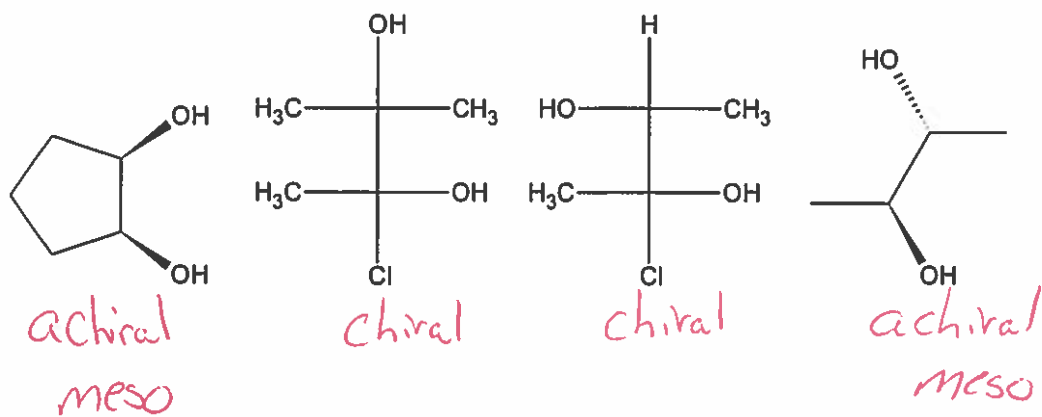


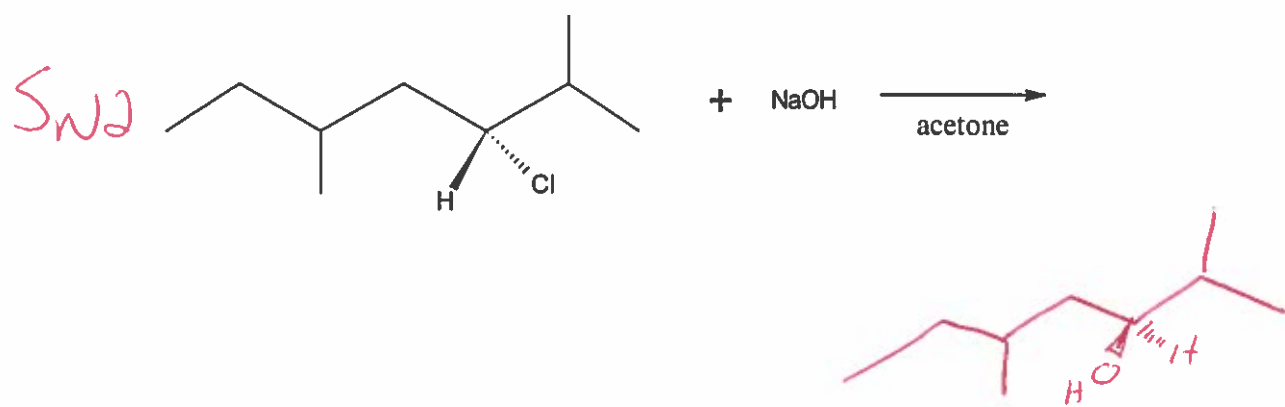
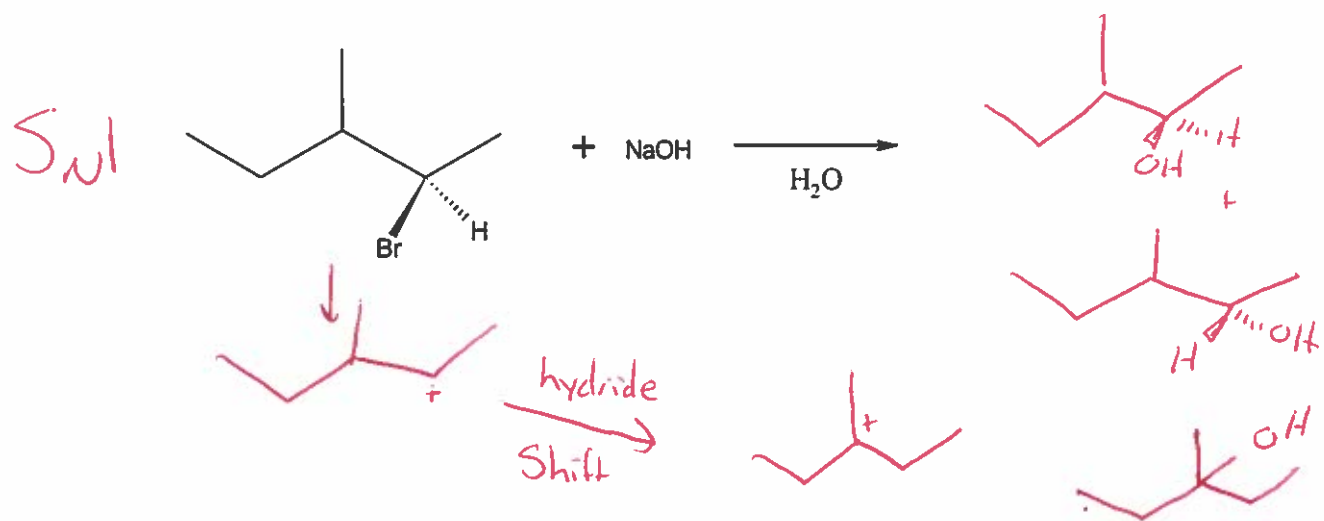
1. Locate all the asymmetric carbon atoms in the following compounds. Determine if each asymmetric carbon is R or S.



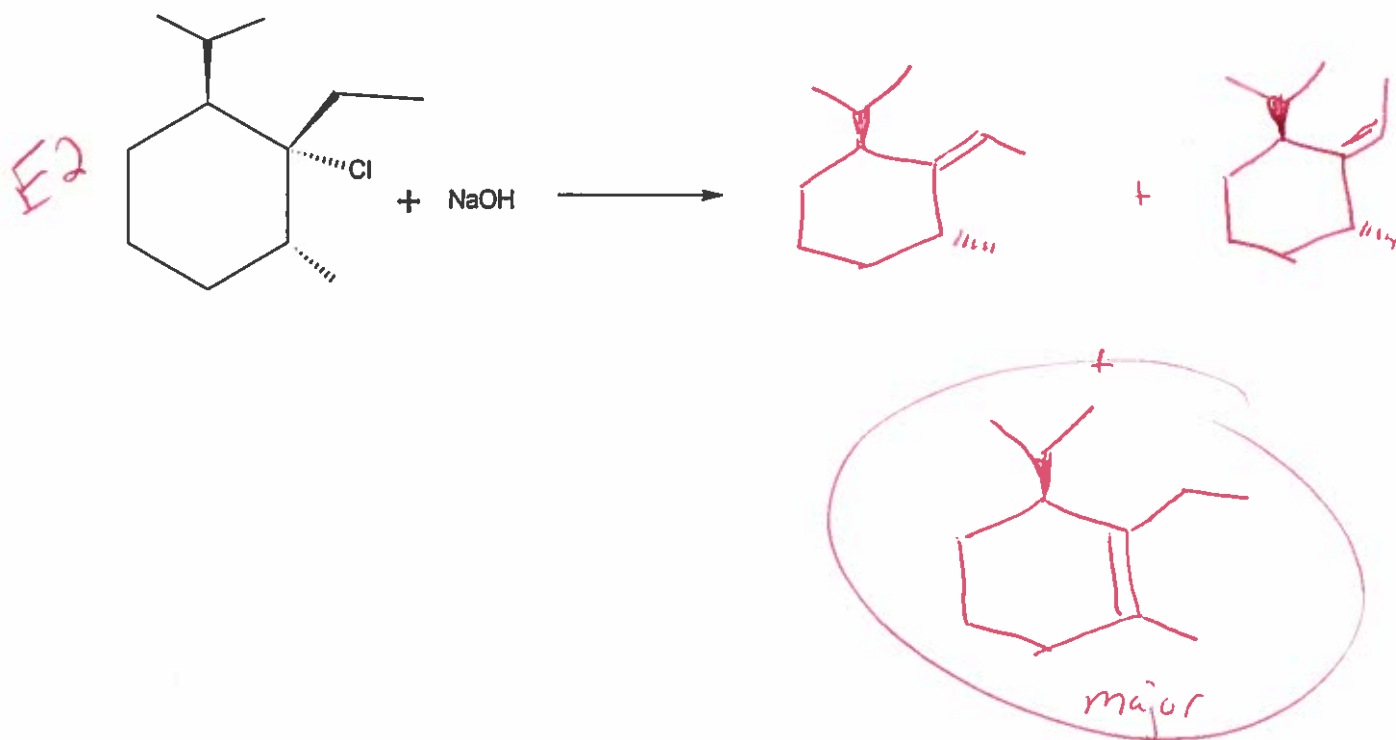
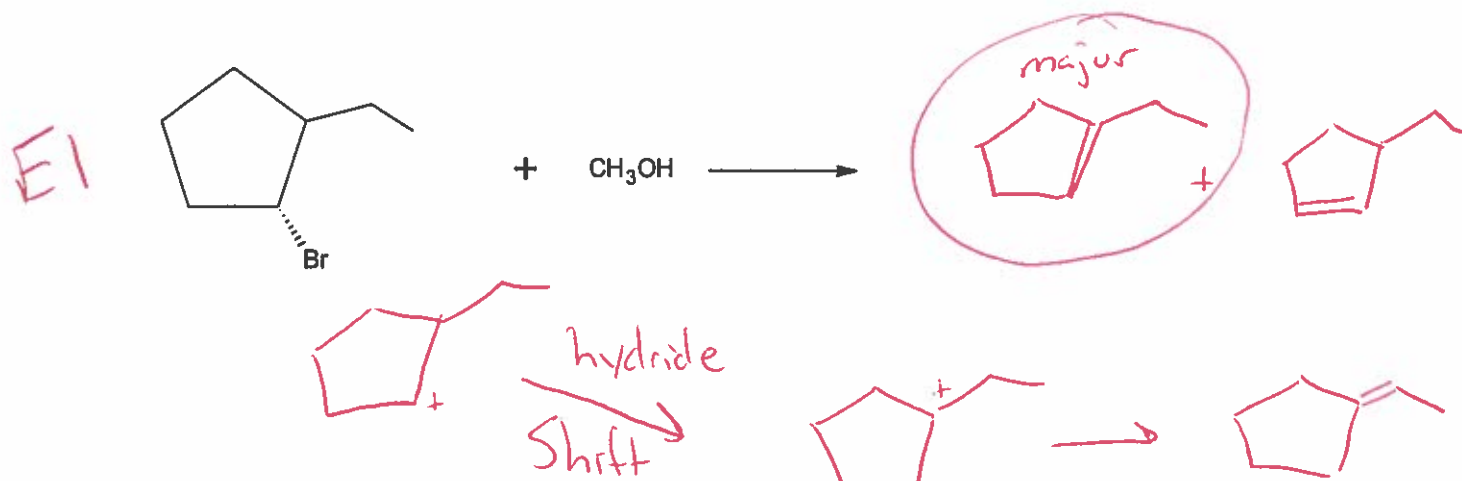
2. For the following compounds, determine if the compound is chiral or achiral. Also identify any meso compounds.



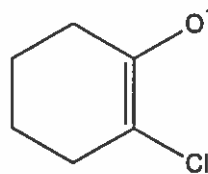
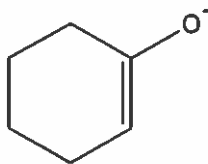
3. For the following nucleophilic substitutions, predict whether the reaction will go by a S_N1 or a S_N2 reaction mechanism as discussed in class. Draw all possible hydrocarbon products, showing three dimensionality when appropriate.



4. For the following β -elimination reactions, predict whether the reaction will go by an E1 or an E2 reaction mechanism as discussed in class. Draw all possible products, showing three dimensionalality when appropriate. When there are two or more products, circle the major product.



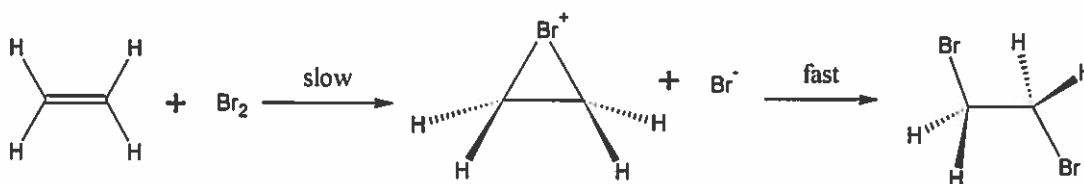
5. Which of the following compounds is more stable and why.



more stable

inductive effect

6. For the following exothermic reaction draw the corresponding energy diagram and label the following?



- a) Reactants
- b) Products
- E_a c) Activation energy(s)
- d) Heat of Reaction
- TS e) Transition state(s)
- f) Intermediate(s)
- RDS g) Rate determining step
- h) Label values of both axis

