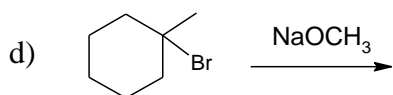
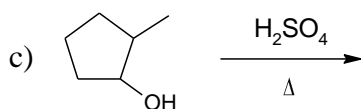
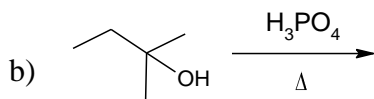
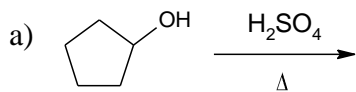
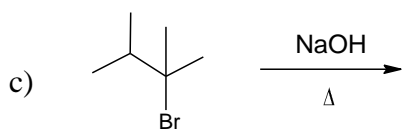
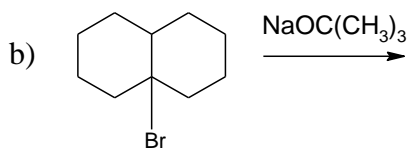
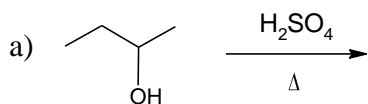


1. Predict the product(s) of the following reactions. Indicate if there is a major or minor product formed.



2. Write the mechanism that gives the **major** product for each reaction.



3. How will you prepare cyclopentene from each compound?
- a) Cyclopentanol

 - b) Cyclopentyl bromide
4. Predict the products formed by sodium hydroxide promoted dehydrohalogenation of the following compounds. Predict the major product.
- a) 1-bromobutane

 - b) 2-chlorobutane


 - c) 3-bromopentane

 - d) (Cis)-1-bromo-2-methylcyclohexane

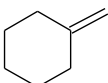
 - e) (Trans)-1-bromo-2-methylcyclohexane

5. What halides would undergo dehydrohalogenation to give the following pure alkenes?

a) Hex-1-ene

b) Isobutylene 

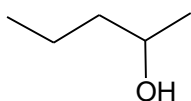
c) Pent-2-ene

d) Methylenecyclohexane 

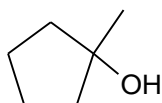
e) 4-methylcyclohexene

6. Predict the major products of acid-catalyzed dehydration of the following alcohols.

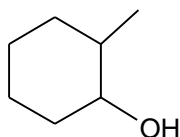
a) Pentan-2-ol



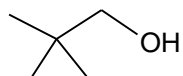
b) 1-methylcyclopentanol



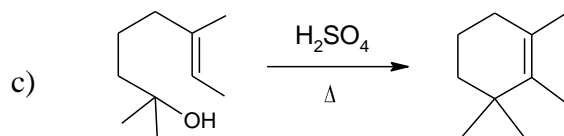
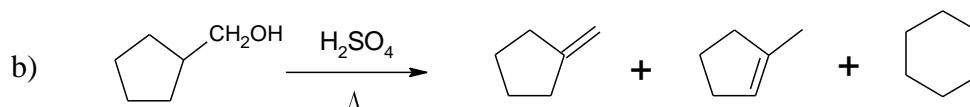
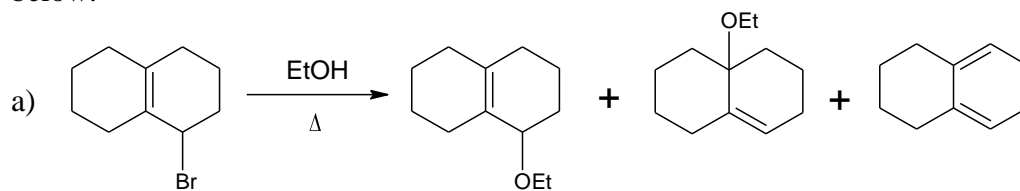
c) 2-methylcyclohexanol



d) 2,2-dimethylpropan-1-ol



7. Propose mechanism for the following reactions showing the formation of the products shown below.



8. Predict the dehydrohalogenation products that result when the following alkyl halides are heated in alcoholic KOH. If more than one product is formed, then indicated the major product.

