1. Predict the products of the following reactions

   a. 

   b. 

   c. 

2. Which reactant in each of the following pairs will undergo an elimination reaction more rapidly? Explain your choice and show the mechanism.

   a. 

   b. 

3. For each of the following, give the major elimination product; if the product can exist as stereoisomers, indicate which stereoisomer is obtained in greater yield.

   a. (R)-2-bromohexane + high concentration HO⁻ →
   b. (R)-2-bromohexane + H₂O →
   c. trans-1-chloro-2-methylcyclohexane + high concentration CH₃O⁻ →
   d. trans-1-chloro-2-methylcyclohexane + methanol →
   e. (R)-2-bromohexane + high concentration sodium tert-butoxide →
   f. (2-Bromo-3-methyl-butyl)-benzene/2-bromo-3-methyl-1-phenylbutane + high concentration methoxide →