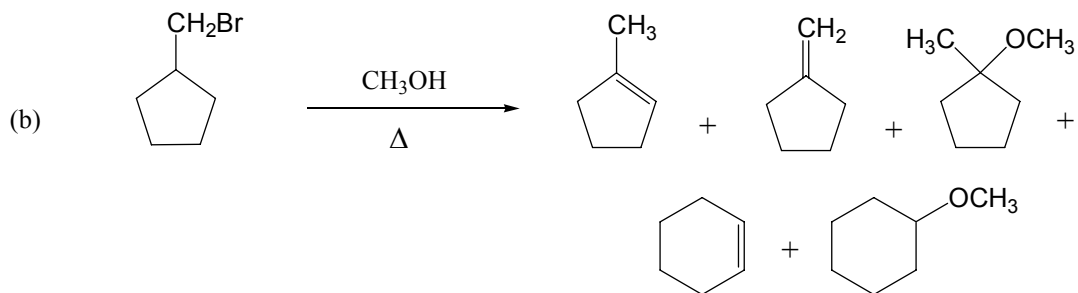
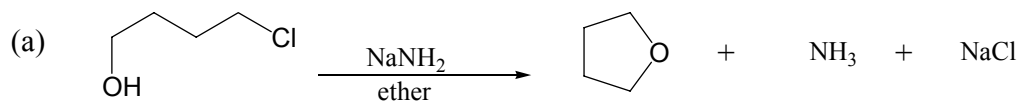


- Arrange the compounds of each set in order of reactivity toward (i) S_N2 displacement and (ii) E2 elimination by KOH in ethanol.
 - 2-bromo-2-methylbutane, 1-bromopentane, 2-bromopentane
 - 1-bromo-3-methylbutane, 2-bromo-2-methylbutane, 2-bromo-3-methylbutane
 - 1-bromobutane, 1-bromo-2,2-dimethylpropane, 1-bromo-2-methylbutane
- Predict the organic products of the following reactions. Label as major and minor, if multiple products are likely.
 - Isopentyl bromide + NaOEt in EtOH
 - Isobutyl bromide + NaOEt in EtOH
 - Methyl bromide + KO-t-Bu in t-BuOH
 - t-butyl bromide + KOCH₃ in CH₃OH
 - 2-bromo-3-methylbutane + NaOEt in EtOH
 - 2-bromo-3-methylbutane + KO-t-Bu in t-BuOH
- Provide reasonable mechanisms to account for the following observations.



4. Starting with isopentane, devise efficient syntheses of (a) 2-methyl-2-butene and (b) 2-methyl-1-butene. Any common reagents may be used.
5. Explain the following observations.

