

Chem 236 – Homework Assignment #5

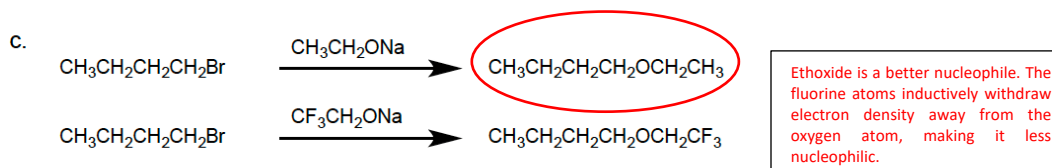
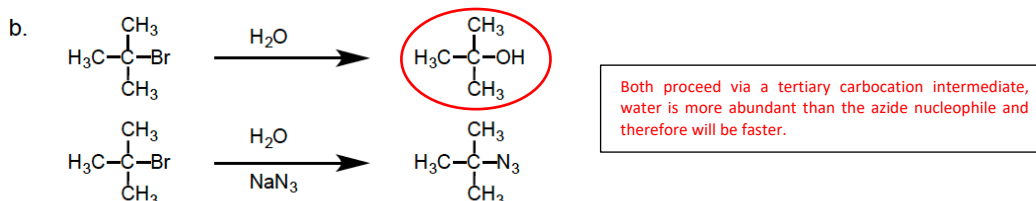
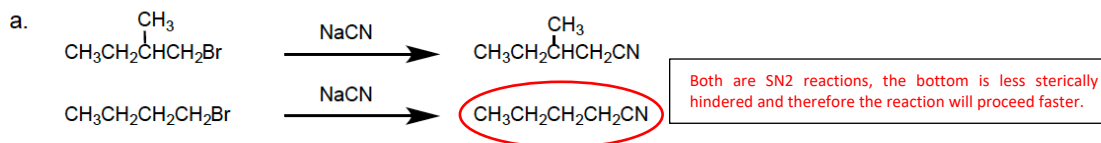
Due October 30, 2023 (Before Lecture Begins)

Explain the following reactions. Why does one under nearly exclusive E2 and the other clean SN2?

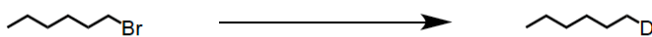


When answering this question, you must draw both starting materials in a chair conformation. Recall that the tBu group is bulky and therefore prevents ring flipping. E2 elimination requires a proton that is anti-periplanar to the bromide leaving group. The starting material on the right does not have this proton since the bromide occupies an equatorial position.

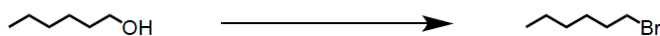
For the following pairs of reactions, circle the one which is faster **and** briefly explain why. Most of the credit will be based on your explanation.



Fill in the reagents to accomplish the following transformations.



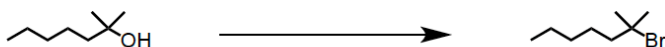
Many ways to do this. One approach is to convert to an organolithium via treatment with Li metal and then add deuterium oxide (D2O)



PBr3



Add potassium metal to generate the alkoxide or use a base such as potassium hydroxide



HBr