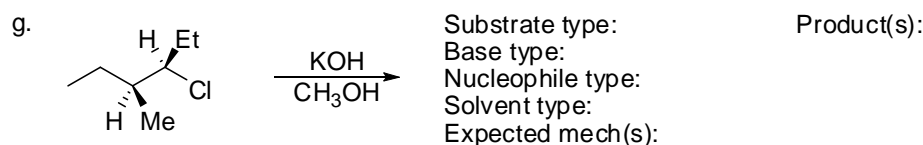
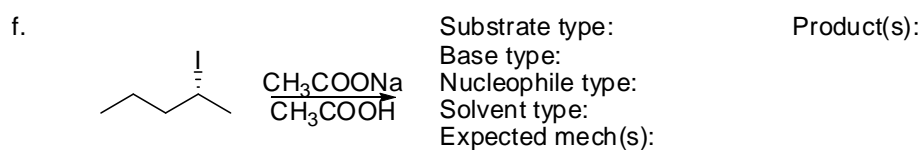
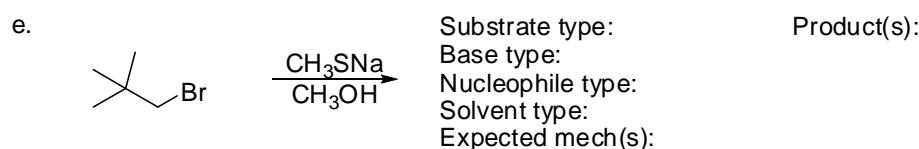
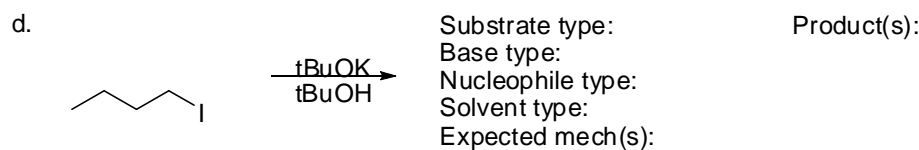
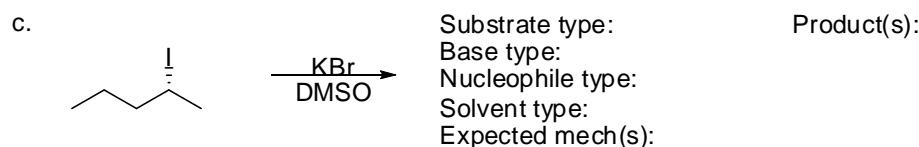
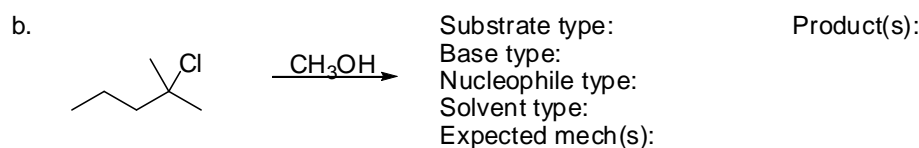
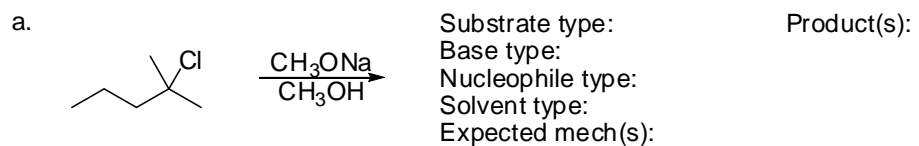
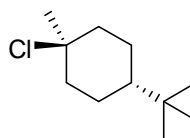
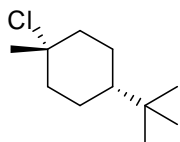


1) Predict the product of the reaction conditions below by filling in details about the substrate, reagent, and solvent. Remember to show all stereochemical possibilities if any product is chiral.



Hint: Remember the required geometry and redraw the molecule in that arrangement.

- 2) Below are two molecules. What reaction would you expect them to do in  $\text{CH}_3\text{ONa}/\text{CH}_3\text{OH}$ ? Which one will be faster at it? Hint: Draw them both in the most stable chair conformation. Which one meets the geometric requirements of the reaction better?



- 3) Fill in the intermediate products of this multi-step synthesis. Hint: In the last step, elimination is not very likely because you'd be forming a double bond to something that's forced to hold  $60^\circ$  bond angles by the three-membered ring it's in.

