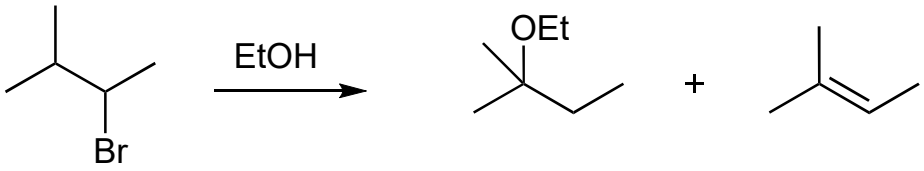
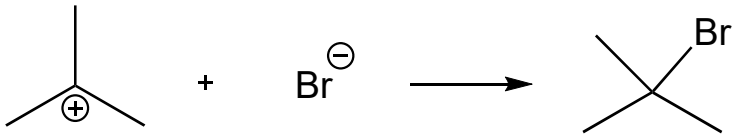
5A) (10 pts) Provide a complete mechanism to account for both products formed in the following reaction. Pay close attention to details, including lone pairs, formal charges and the use of curved arrows.



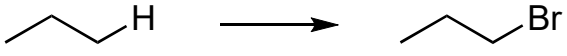
5B) (2 pts) Is the S_N2 reaction unimolecular or bimolecular? Place answer in box (no explanation needed).

5C) (6 pts) **Add any missing lone pairs** (all formal charges are shown), **add the required curved arrow(s)** to show the mechanism for the forward reaction, and **describe this step** (identify the arrow-pushing pattern).



Describe arrow-pushing pattern:

5D) (4 pts) Using the bond dissociation energies given, determine whether the following transformation would be exothermic or endothermic. **Briefly explain (or show your work)**. **No work = no credit.**



Bond Dissociation Energy

C–H	104 kcal/mol
C–Br	70 kcal/mol