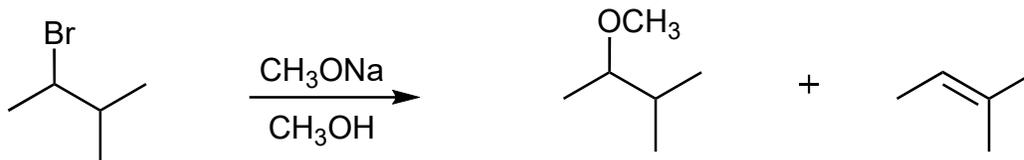
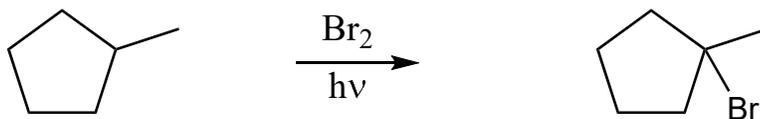


4A) (8 pts) Provide complete mechanisms to account for both products formed in the following reaction. Pay close attention to details including lone pairs, formal charges and the use of curved arrows.



4B) (8 pts) Provide a complete mechanism for the following halogenation reaction. Pay close attention to details including lone pairs, formal charges and the use of curved arrows.



4C) (5 pts) Provide a mechanism for the following carbocation rearrangement. Is this rearrangement favorable? **Briefly explain** why or why not, and **use drawings** to support your explanation.

