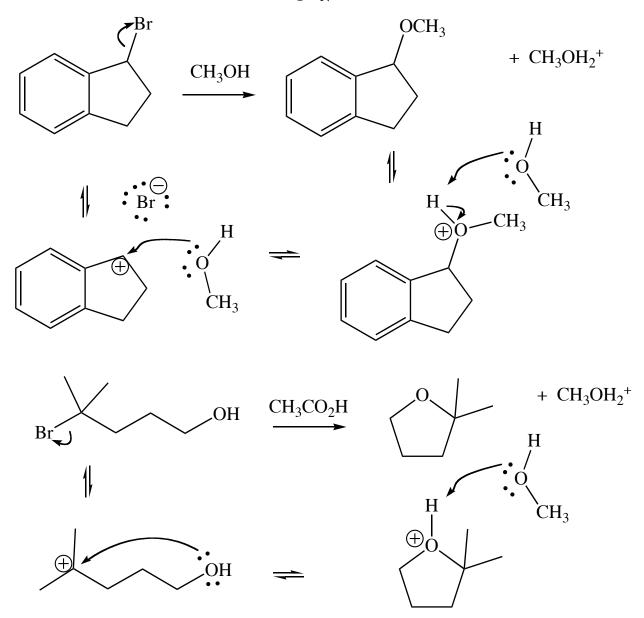
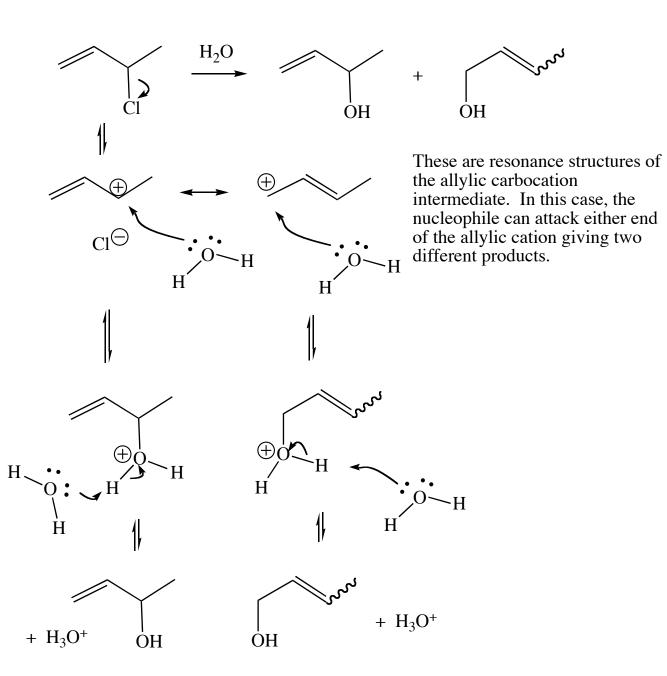
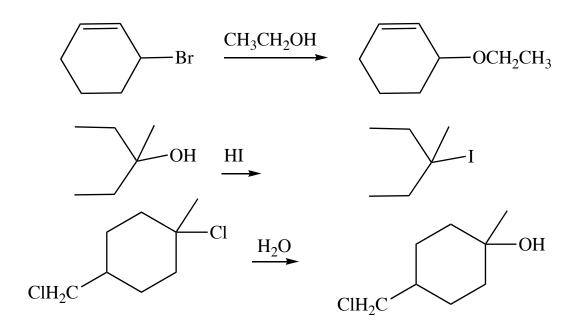
Provide mechanisms for the following  $\mathbf{S}_{\mathbf{N}}\mathbf{1}$  reactions.





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## **Predict the product of the following SN1 reactions:**



How would you prepare the following using an  $S_{\rm N}{\rm 1}$  reaction.

