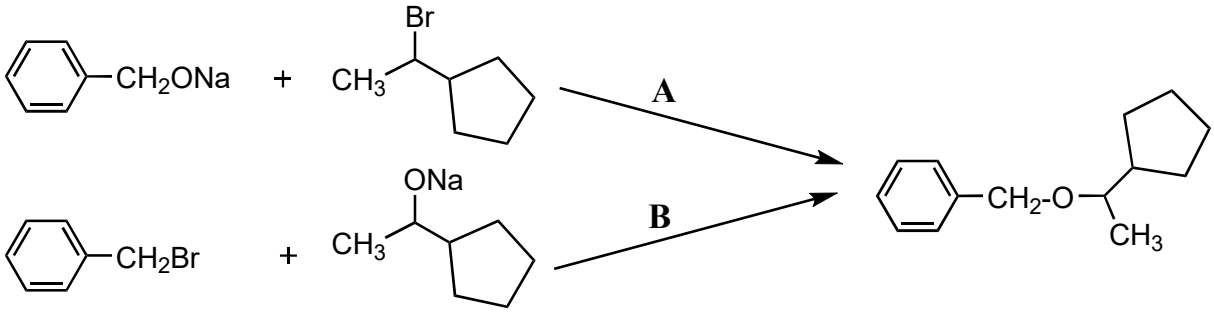
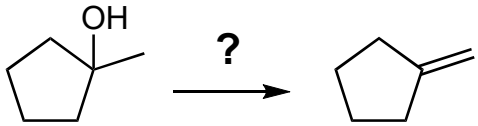
3A) (6 pts) Which set of reagents (**A**, **B** or neither) would be more suitable to perpare the given target molecule? Briefly explain why it is better than the other option. **No explain = no credit.**

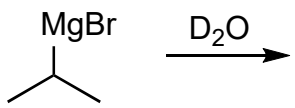


3B) (8 pts) Determine whether each of the following sets of reagents is suitable to achieve the given transformation. For the reagents that would NOT work, explain briefly why not. **No explain = no credit.**



conc. H_2SO_4 / **heat** suitable reagents? (yes or no) ☐ explain if "no"	**1) $SOCl_2$** / **2) *t*-BuOK** suitable reagents? (yes or no) ☐ explain if "no"
1) NaH / **2) *t*-BuOK** suitable reagents? (yes or no) ☐ explain if "no"	**1) TsCl** / **2) NaOEt** suitable reagents? (yes or no) ☐ explain if "no"

3C) (6 pts) Predict the major organic product, and provide a mechanism that shows how it is formed.



(D = deuterium = ^2H)