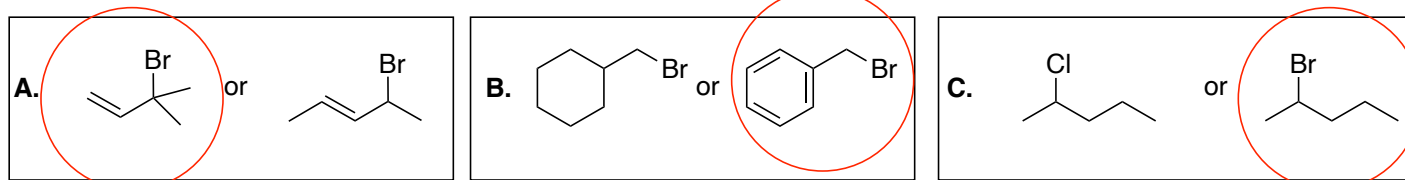
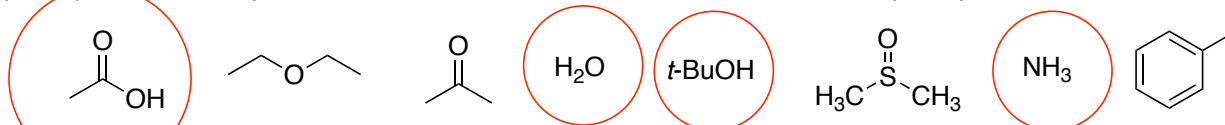


Name: Key

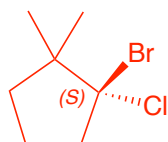
1. (6 points) Circle the molecule in each pair that will react faster in an S_N1 reaction.



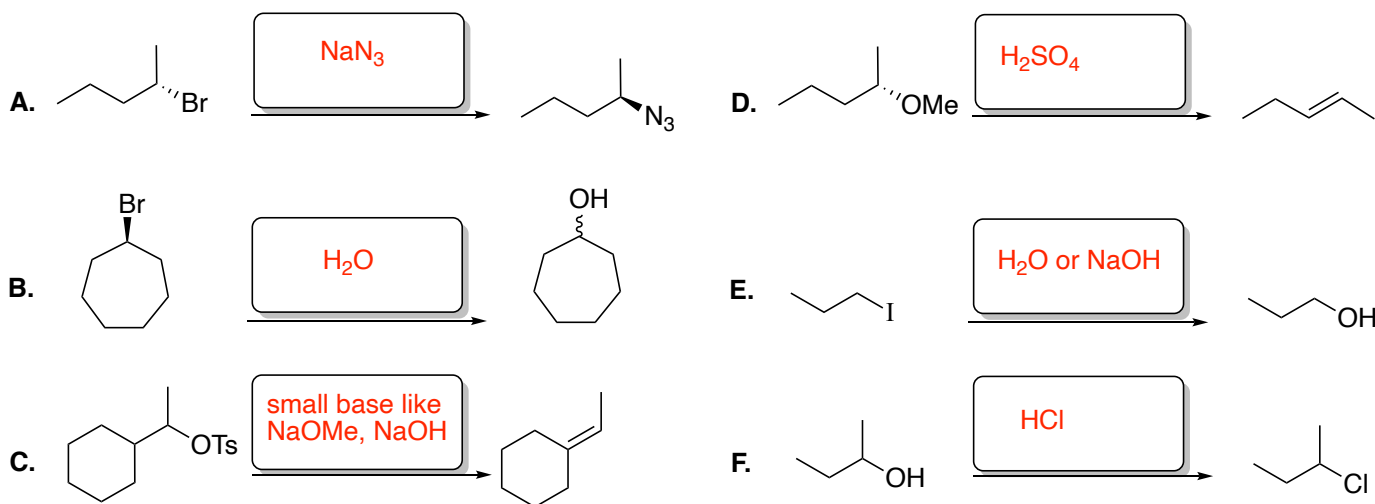
2. (4 points) All of the compounds below can be used as solvents, circle the four polar protic solvents.



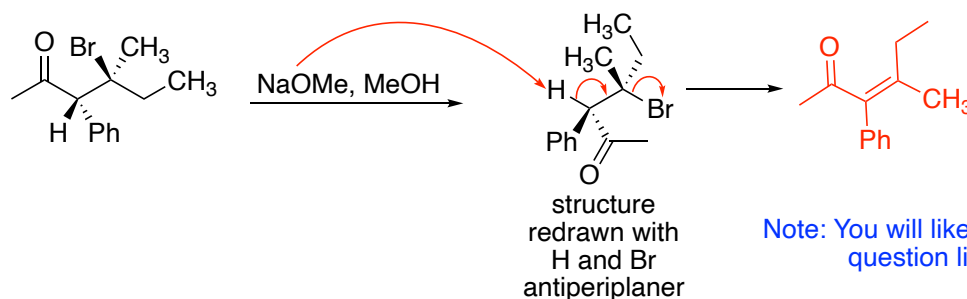
3. (4 points) Provide the structure of (S)-2-bromo-2-chloro-1,1-dimethylcyclopentane



4. (12 points) Give a reagent that can achieve each of the following reactions. Solvents are not needed.

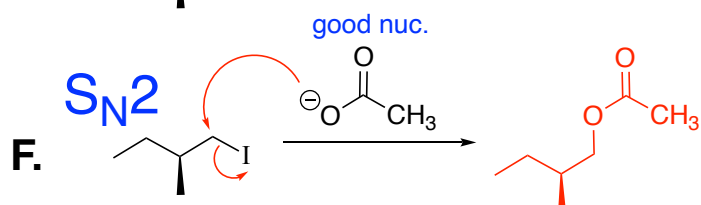
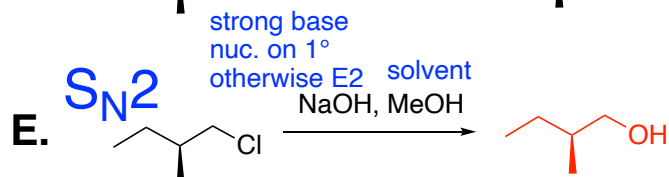
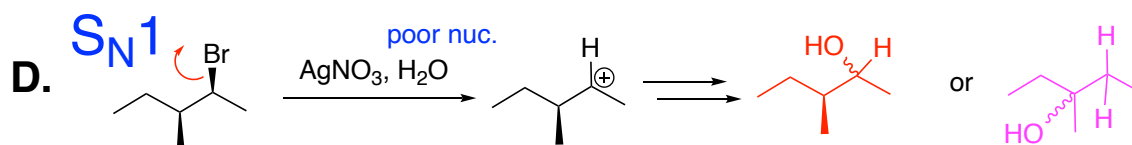
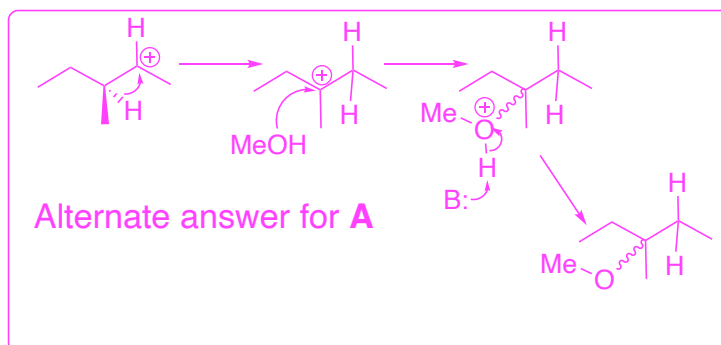
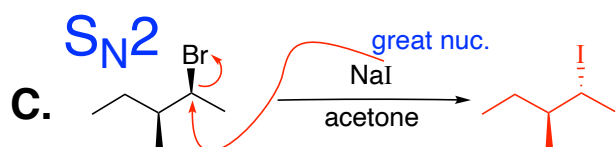
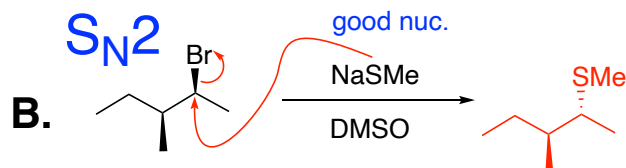
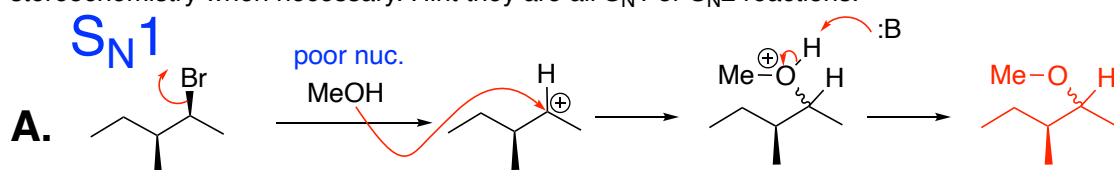


5. (6 points) Draw the following compound so that it is setup for the antiperiplanar E2 elimination then do the elimination to provide the major alkene product.



Note: You will likely see another question like this!

6. (12 points) Draw the major organic product formed from the following reactions. Remember to show stereochemistry when necessary. Hint they are all S_N1 or S_N2 reactions.



7. (12 points) Provide a detailed curly arrow mechanism for one of the products of the following reaction.

