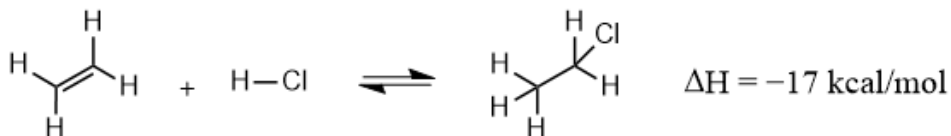


Dr. Starkey, CHM 3140 Organic Chem. I, Cal Poly Pomona
Exam III Review – [Practice Problems](#)

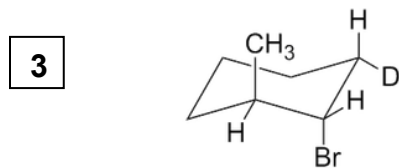
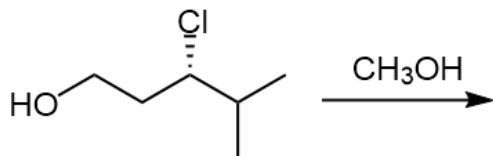
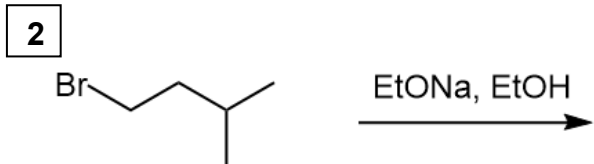
For clicker question voting, go to:
<https://pollev.com/lauriestarke263>
LAURIESTARKE263 to 37607



- 1 Do you expect the forward reaction to be spontaneous?
Explain briefly.

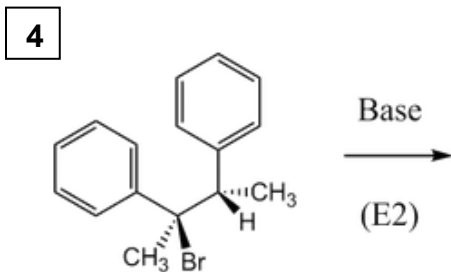


Predict the major and minor products, and provide mechanisms for all products.




What is the major product of an E2 reaction of the compound shown above?

Predict the major product.



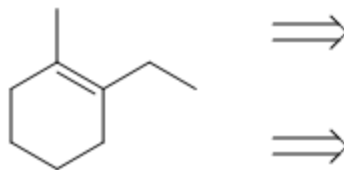
5

In which of the following are the solvents NOT listed in order of increasing polarity?

- less polar more polar
- A) CH_3COOH < CF_3COOH
- B) CH_3OH < $\text{CH}_3\text{CH}_2\text{OH}$
- C)  < CH_3OH
- D) CH_3OH < H_2O
- E) aprotic < protic

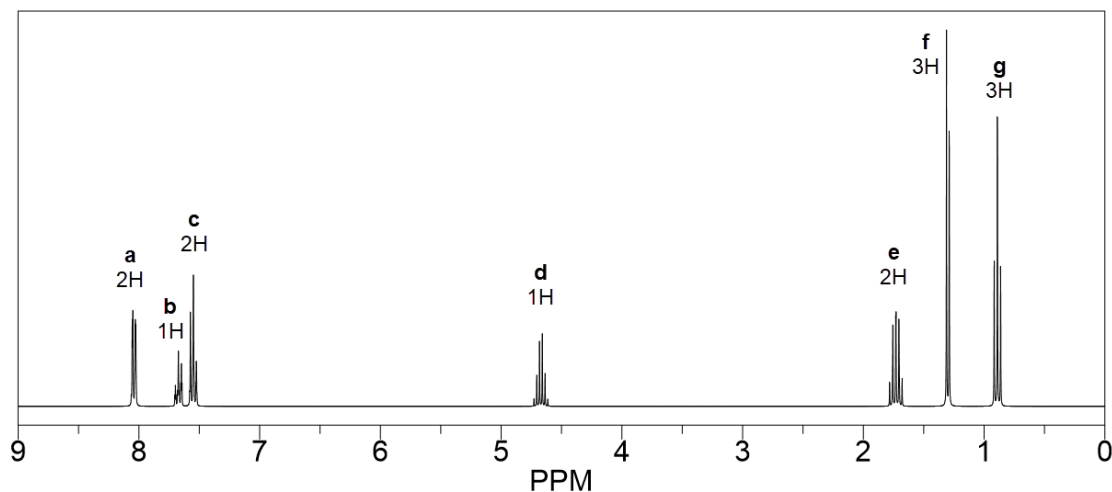
6

Provide TWO possible synthetic routes to the given alkene target molecule. Begin with two different retrosyntheses (what starting material and reagent?).



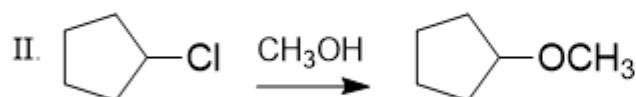
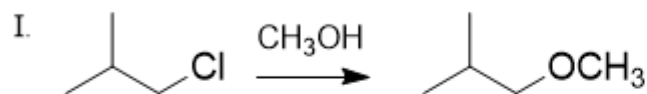
7

Provide a structure with the formula $\text{C}_{11}\text{H}_{14}\text{O}_2$ that is consistent with the following NMR spectrum.



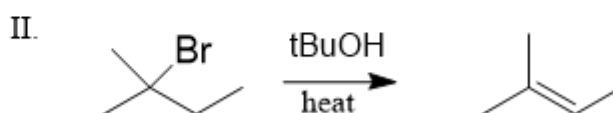
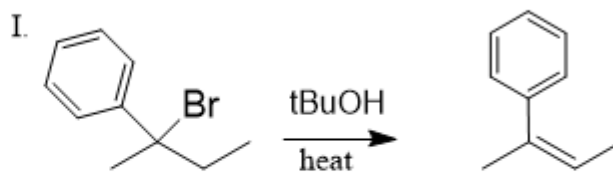
VIII. (20 pts) For each of the following pairs of reactions, name the mechanism, indicate which reaction will be faster and briefly explain why. If you expect no significant difference in the reaction rates, say so. (Note: an explanation such as, "secondary is faster" is NOT sufficient - *why* is it faster? Why isn't it slower?)

8



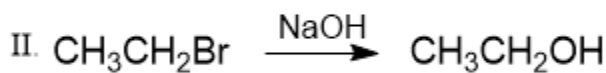
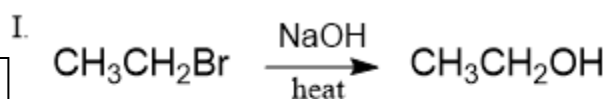
mechanism name?
which is faster? Explain.

9



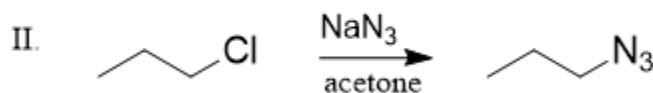
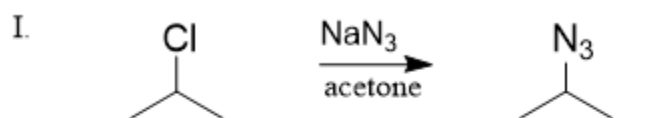
mechanism name?
which is faster? Explain.

10



mechanism name?
which is faster? Explain.

11



mechanism name?
which is faster? Explain.

12

Add in any **missing formal charges**. Draw **curved arrows** for each step of the mechanism. Draw the **structures of the transition states TS-1 and TS-2** for the two-step mechanism.

