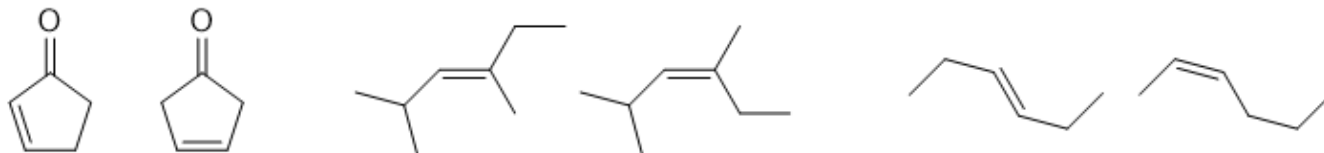


Library of Organic Chemistry Active Learning Resources LOCAL  
Chapter 7 Alkyl Halides - Part 3 (E2 Elimination Reactions)



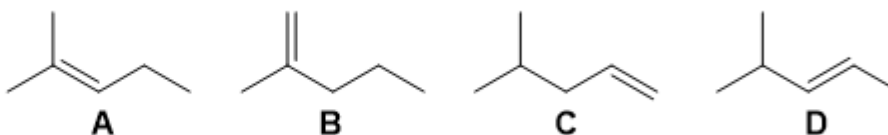
Select the more stable alkene in each pair of compounds.

1



2

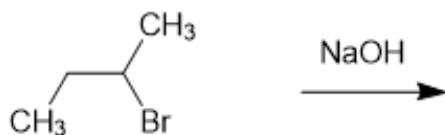
Arrange alkenes from most stable to least stable:



3

Example:

E2  
mech.



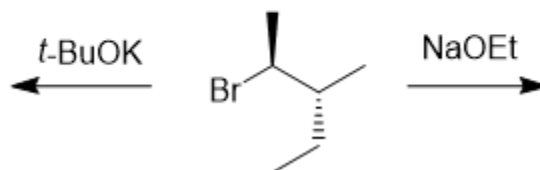
"eliminate" or lose  $\beta$ -hydrogen and LG ( $-$  HBr called dehydrohalogenation)

Group work: draw a Transition State for E2 reaction given above.

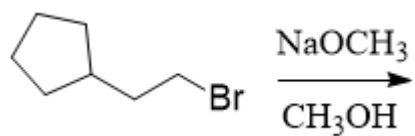
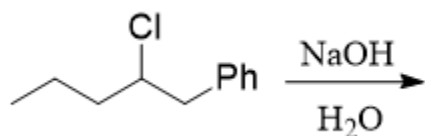
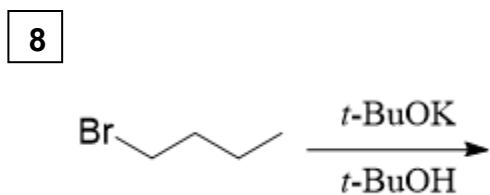
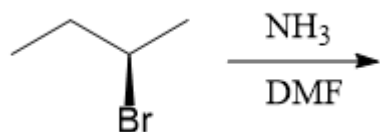
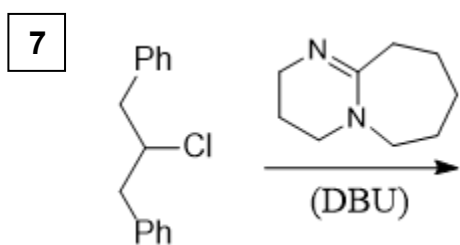
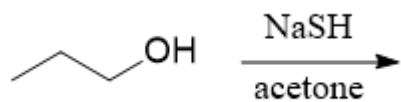
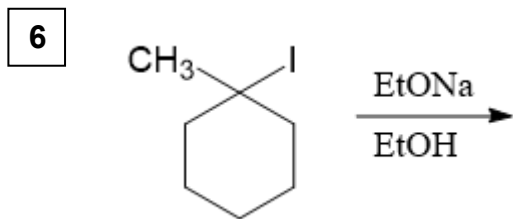
4

Group work: predict the major product for the following E2 elimination reactions. Consider both regiochemistry and stereochemistry.

5

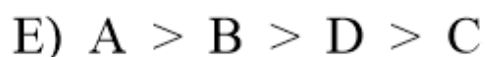
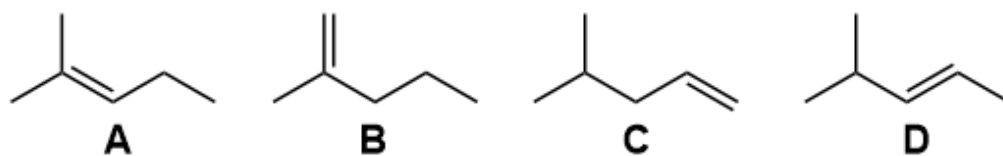


In each case, determine the mechanism ( $S_N2$ , E2 or N.R.) and predict the major product(s).



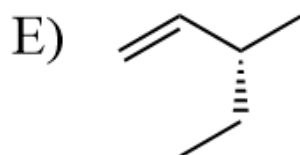
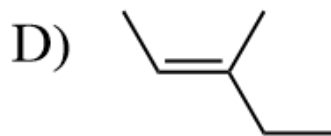
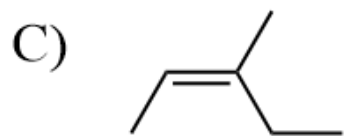
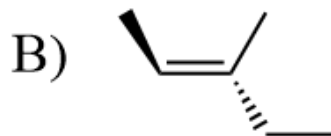
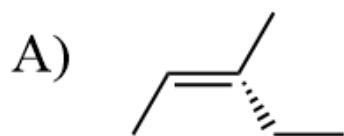
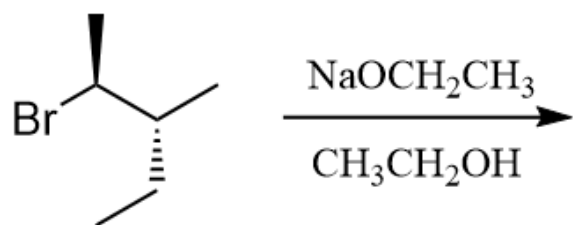
2

Arrange the following alkenes from MOST stable to LEAST stable.



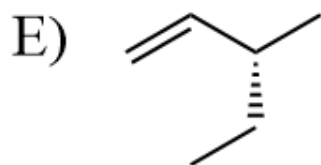
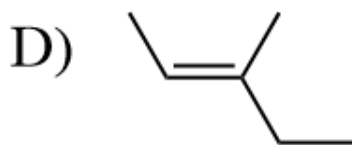
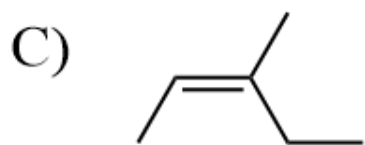
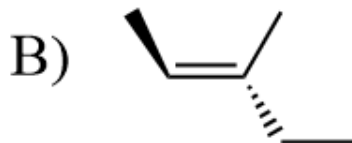
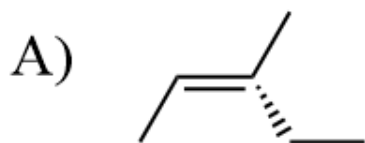
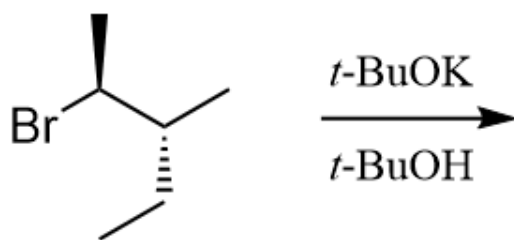
4

Predict the major product.

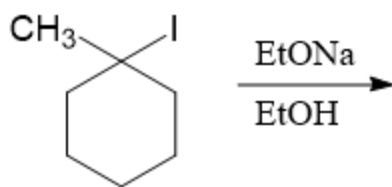


5

Predict the major product.



6 Predict the major products for the following reactions.

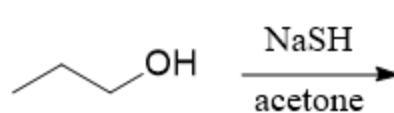


A) E2

B) S<sub>N</sub>2

C) E2

D) E2

E) S<sub>N</sub>2S<sub>N</sub>2

N.R.

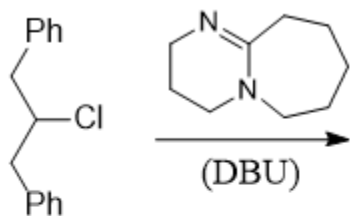
E2

N.R.

S<sub>N</sub>2

7

Predict the major products for the following reactions.

A)  $S_N2$ B)  $S_N2$ 

C) E2

D) N.R.

E) E2

 $S_N2$ 

N.R.

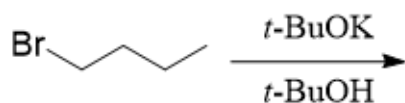
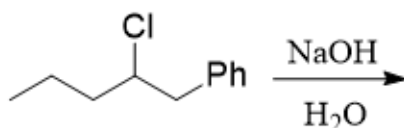
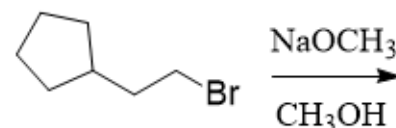
E2

E2

 $S_N2$ 

8

Predict the major products for the following reactions.

A)  $t\text{-BuO-CH}_2\text{CH}_2\text{CH}_2\text{CH}_3$ B)  $\text{CH}_3\text{CH=CHCH}_3$ C)  $\text{CH}_3\text{CH=CHCH}_3$ D)  $\text{CH}_3\text{CH=CHCH}_3$ E)  $\text{CH}_3\text{CH=CHCH}_3$ A)  $\text{CH}_3\text{CH(OH)CH}_2\text{CH}_2\text{Ph}$ B)  $\text{CH}_3\text{CH=CHCH}_2\text{Ph}$ C)  $\text{CH}_3\text{CH=CHCH}_2\text{Ph}$ D)  $\text{CH}_3\text{CH=CHCH}_2\text{Ph}$ E)  $\text{CH}_3\text{CH=CHCH}_2\text{Ph}$ A)  $\text{Cyclopentyl-CH}_2\text{CH}_2\text{OCH}_3$ B)  $\text{Cyclopentyl-CH}_2\text{CH}_2\text{OCH}_3$ C)  $\text{Cyclopentyl-CH=CH}_2$ D)  $\text{Cyclopentyl-CH=CH}_2$ E)  $\text{Cyclopentyl-CH=CH}_2$