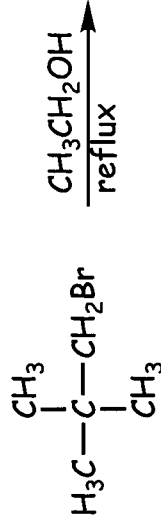


(elimination product)

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E1

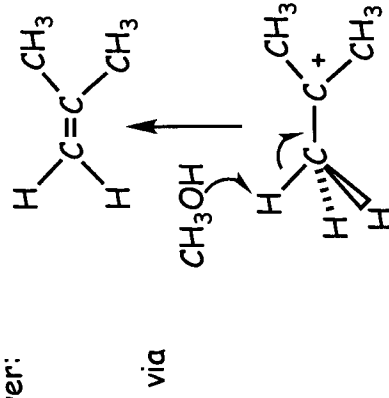


(major and minor  
elimination products)

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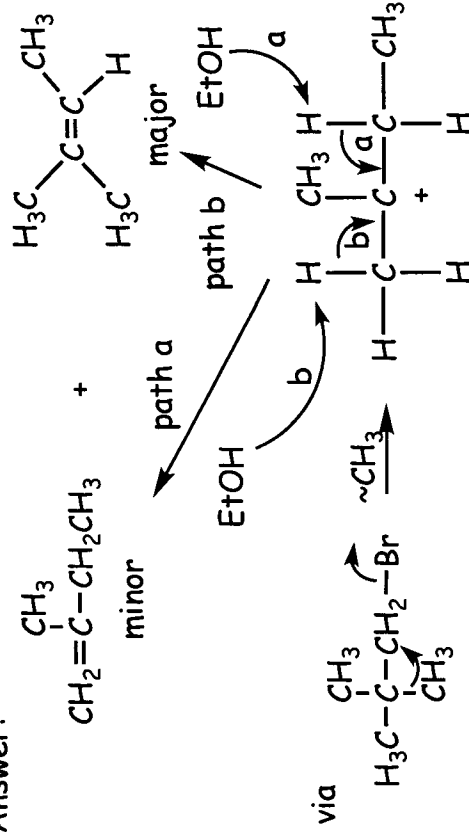
E2

Answer:

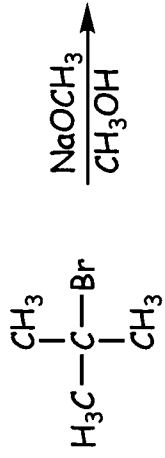


NOTE: The r.d.s. is ionization of the 3° halide to form the carbocation (E1 reaction)

Answer:

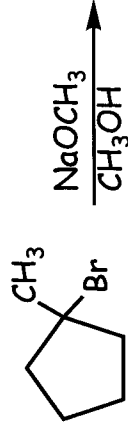


NOTE: concerted methyl migration during solvolysis (see S15)



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E3

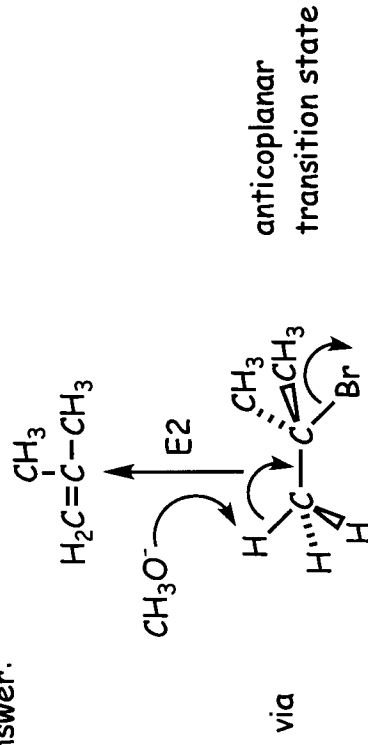


(major and minor products)

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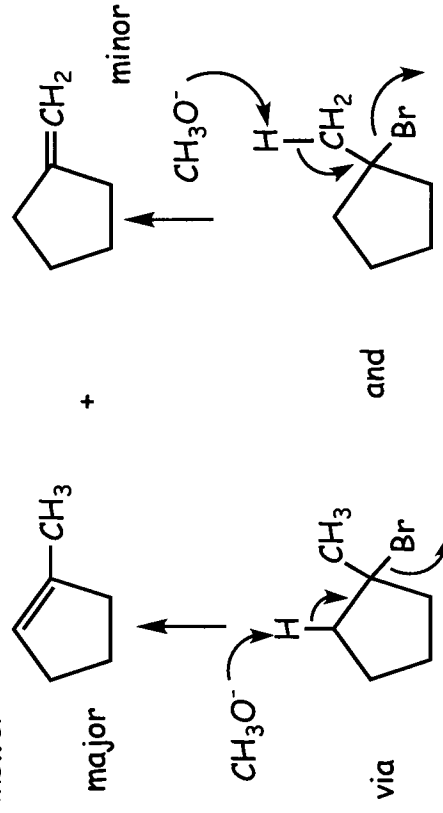
E4

Answer:

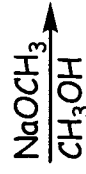
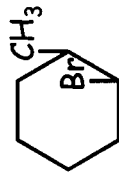


NOTE: 3° halide does not react by S<sub>N</sub>2 mechanism to give substitution product

Answer:



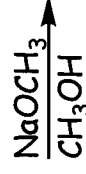
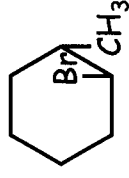
NOTE: E2 reaction: 3° halide does not undergo S<sub>N</sub>2 reaction



(major elimination product)

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E5

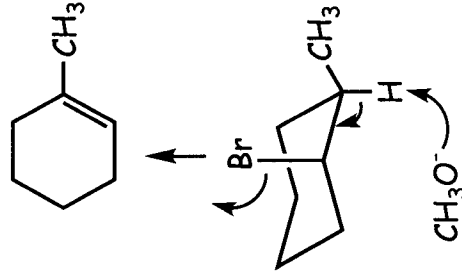


(major elimination product)

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E6

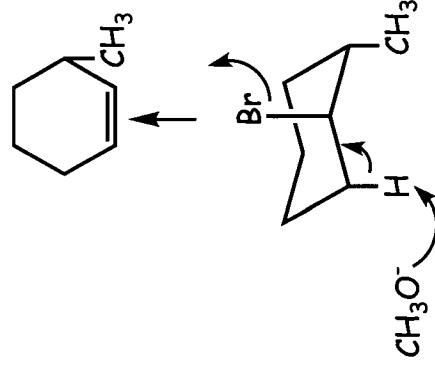
Answer:



via

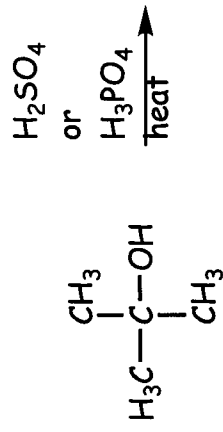
NOTE: E2 reaction; H and Br must be anticoplanar in transition state

Answer:



via

NOTE: E2 reaction; H and Br must be anticoplanar in transition state



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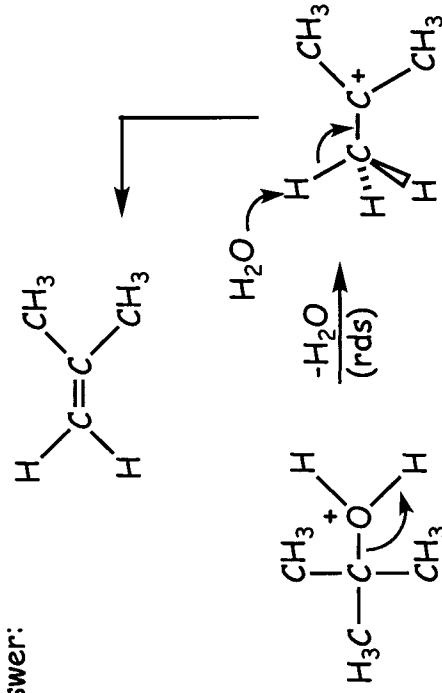
E7



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E8

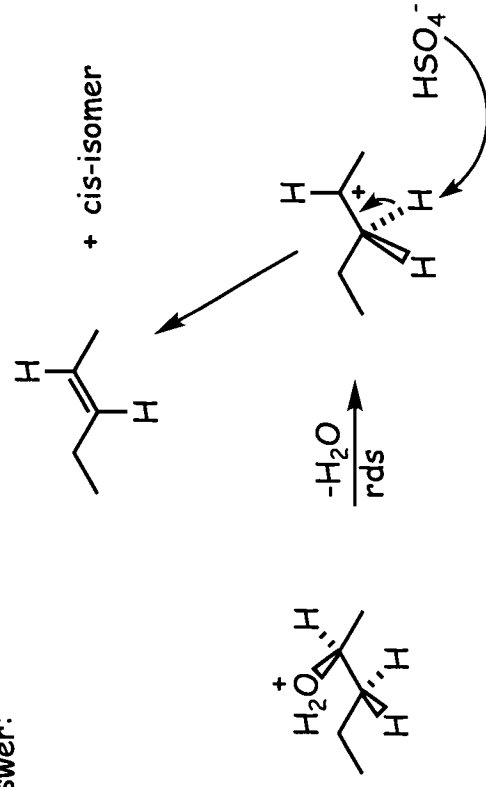
Answer:



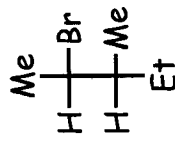
via

NOTE: A strong acid is required to protonate the alcohol

Answer:



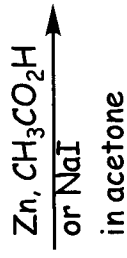
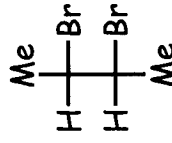
NOTE: E1 reaction; Saytzeff product predominates



major elimination product

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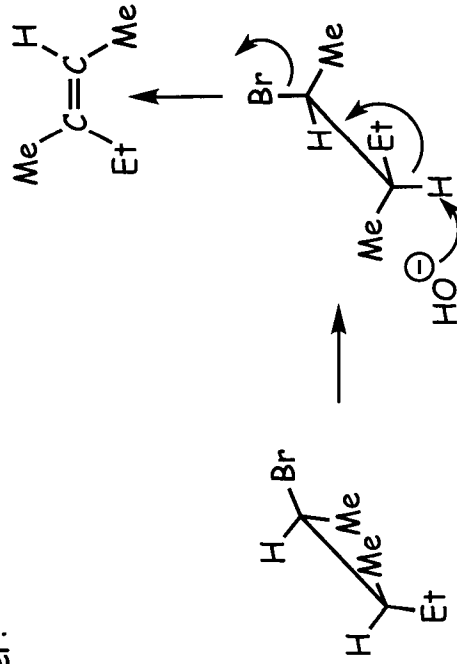
E9



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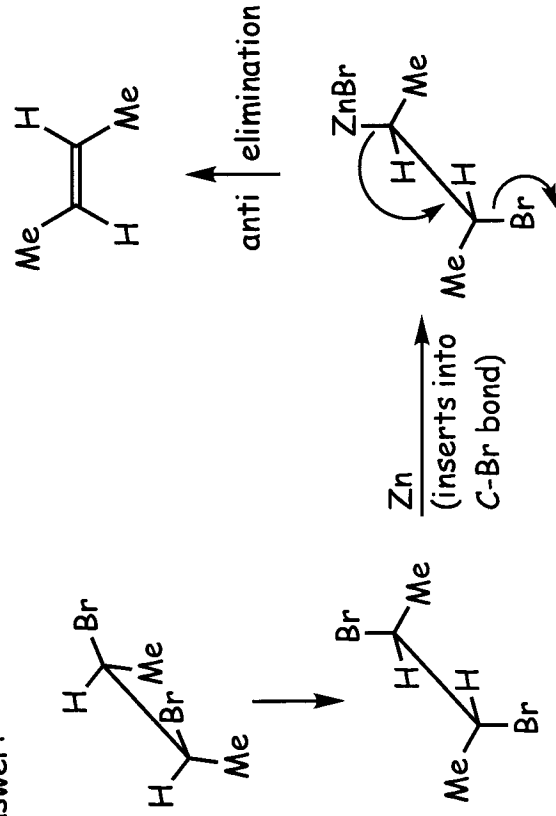
E10

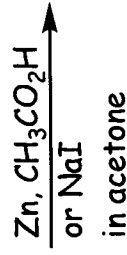
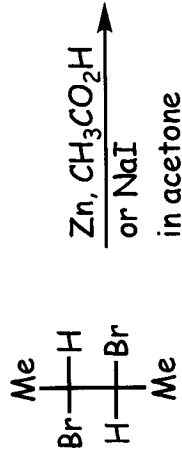
Answer:



NOTE: Anticoplanar T.S. for E2 Rxn.

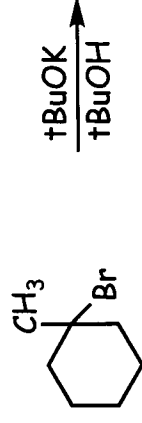
Answer:





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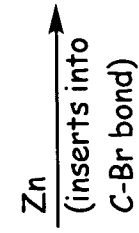
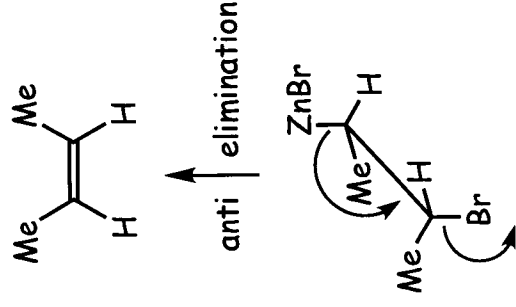
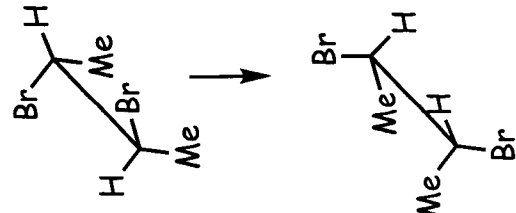
E11



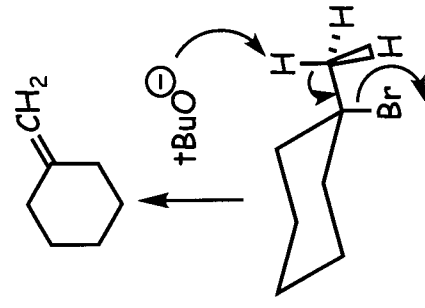
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E12

Answer:

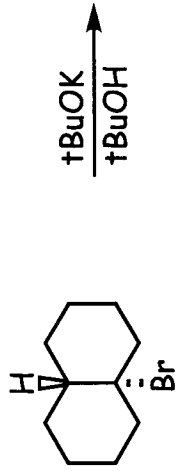


Answer:



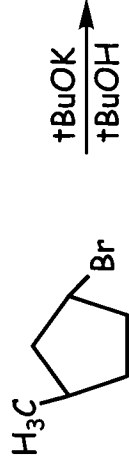
via

NOTE: Hindered base favors Hofmann product (E2 reaction)



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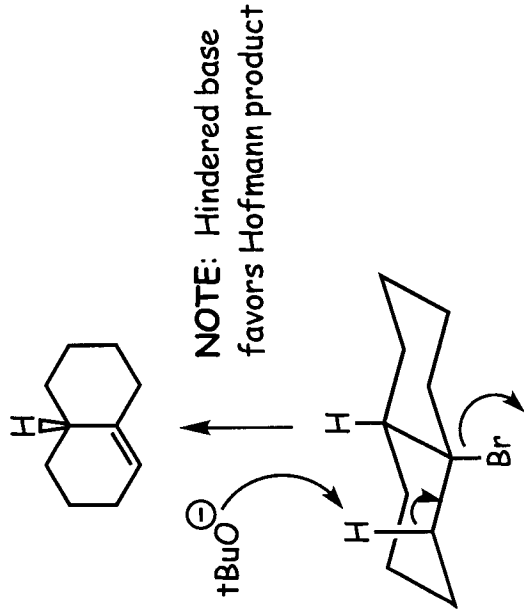
E13



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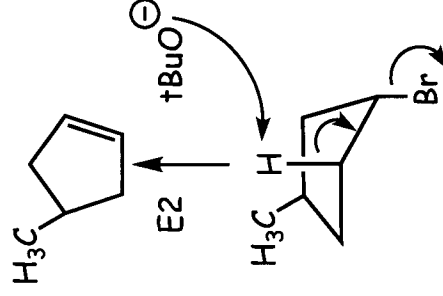
E14

Answer:

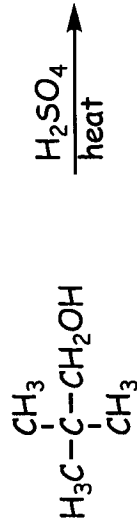


NOTE: Hindered base favors Hofmann product

Answer:



NOTE: Hindered base gives E2 product rather than  $\text{S}_{\text{N}}2$  product (see S7); abstraction of H farthest from methyl group favored.



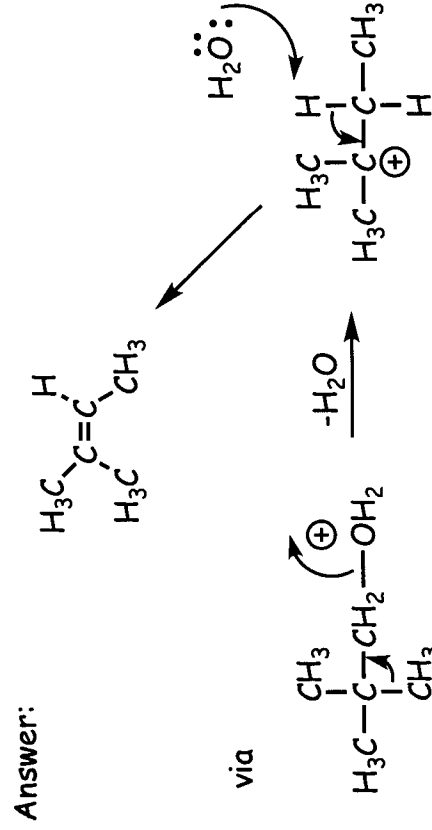
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E15



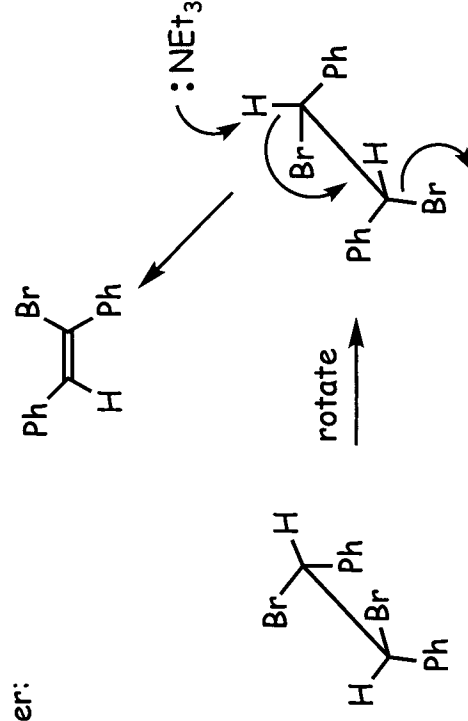
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E16



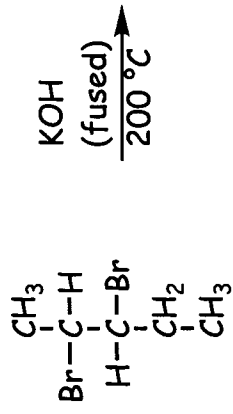
NOTE: E1 reaction with rearrangement. The 1° carbocation would be short-lived if formed at all.

Answer:



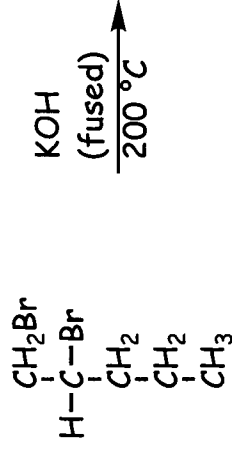
NOTE: Vicinal dibromide undergoes E2 dehydrohalogenation when treated with a hindered base.





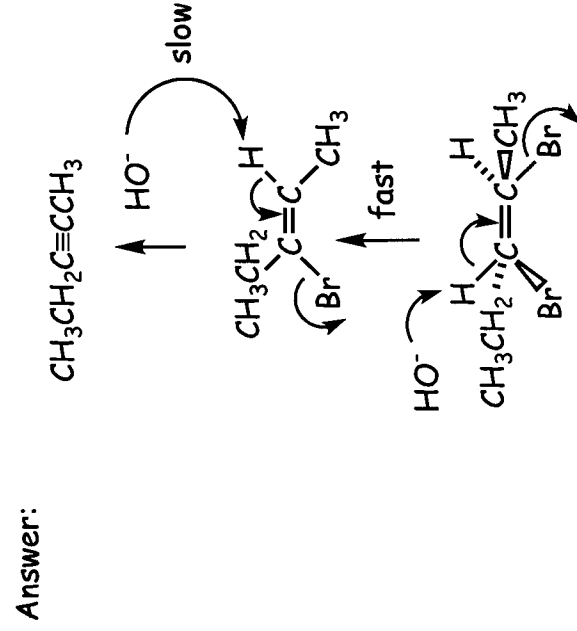
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E17

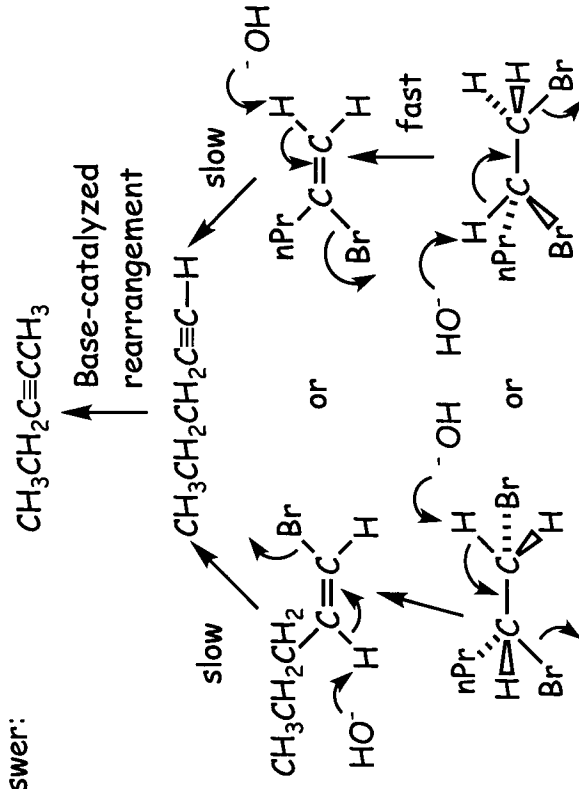


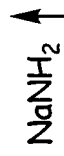
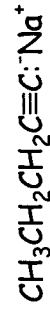
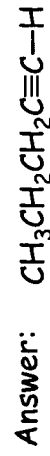
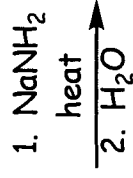
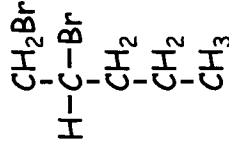
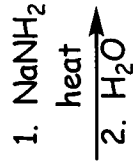
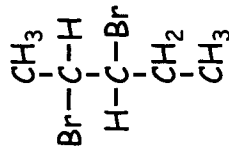
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E18

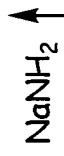


Answer:

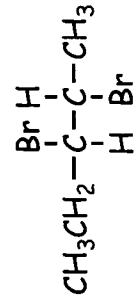




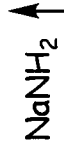
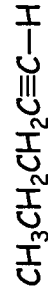
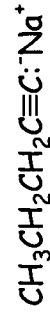
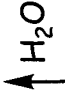
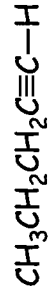
Base-catalyzed rearrangement



Double dehydrobromination



Answer:



Double dehydrobromination

