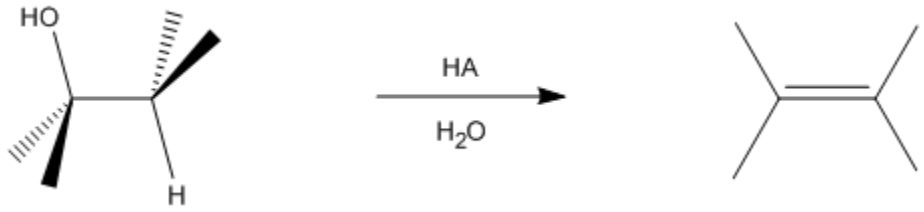
CONCEPT: DEHYDRATION REACTION

□ Alcohols are terrible leaving groups, but in the presence of acid, they can be converted into an awesome leaving group

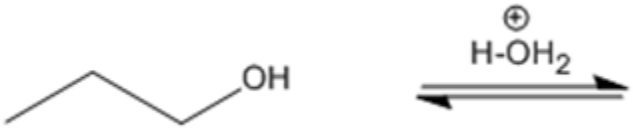


● The more –R groups on the alcohol, the easier to dehydrate: _____

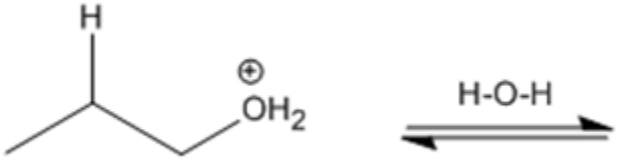
● The specific elimination mechanism depends on how easily the molecule will form a _____.

E2 Dehydration: 1° Alcohol Mechanism:

● Protonation:

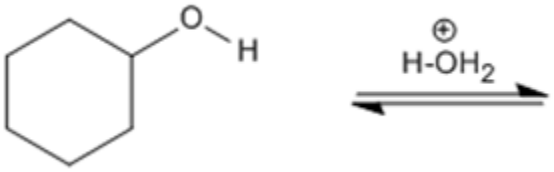


● E2 β-Hydrogen Elimination:

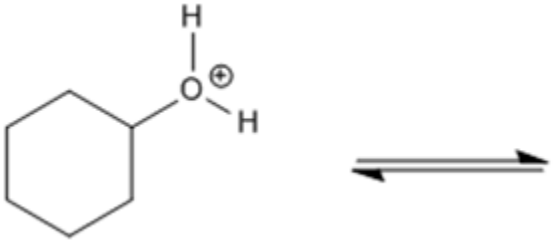


E1 Dehydration: 2° and 3° Alcohol Mechanism:

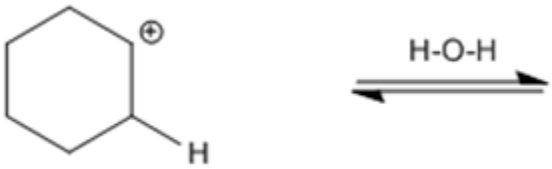
- Protonation:



- Carbocation Formation:

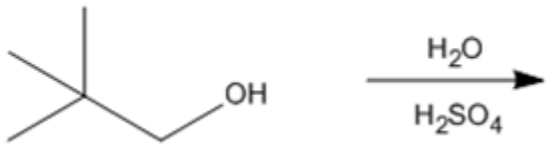


- E1 β-Hydrogen Elimination:



PRACTICE: Provide the mechanism and major product for the following dehydration reactions:

a.



b.