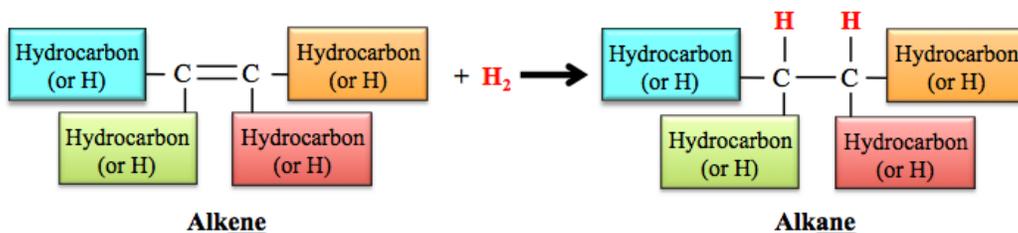


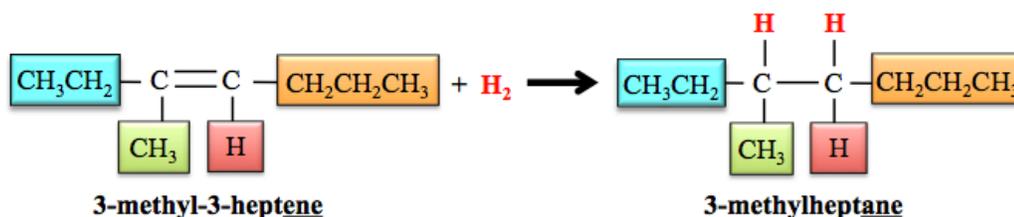
Classes of Organic Reactions

1) Hydrogenation: Reduction of Alkenes

- Alkenes and other unsaturated hydrocarbons undergo a reduction reaction hydrogenation, in which hydrogen gas (H_2) in the presence of a catalyst, acts as a reducing agent.

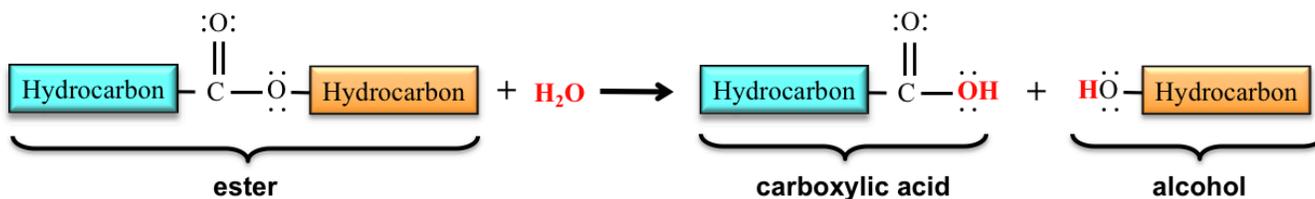


- Example:



2) Hydrolysis of Esters

- The hydrolysis of an ester produces a *carboxylic acid* and an *alcohol* molecule.



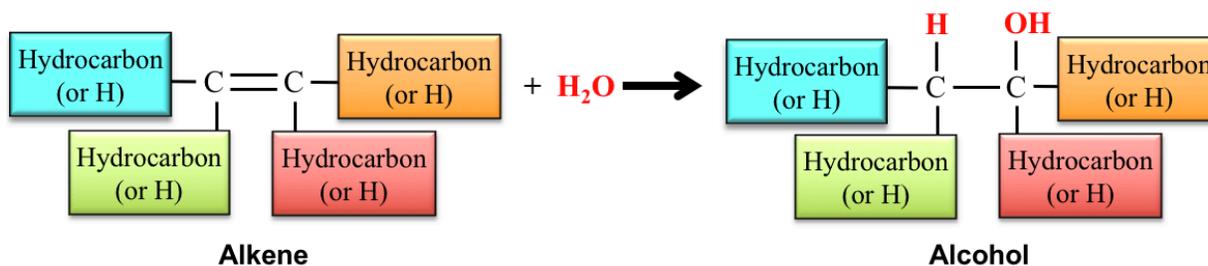
Example:



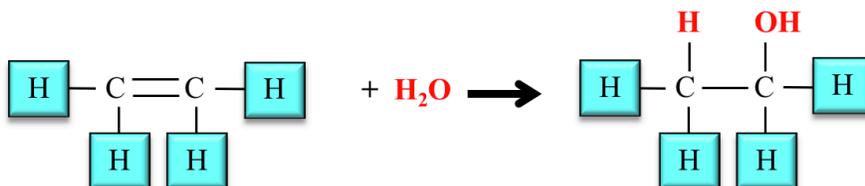
Chapter 6 Reactions Worksheet and Key

3) Hydration of Alkenes

In a hydration reaction, H_2O is added “across” a double bond in an alkene to produce an alcohol.



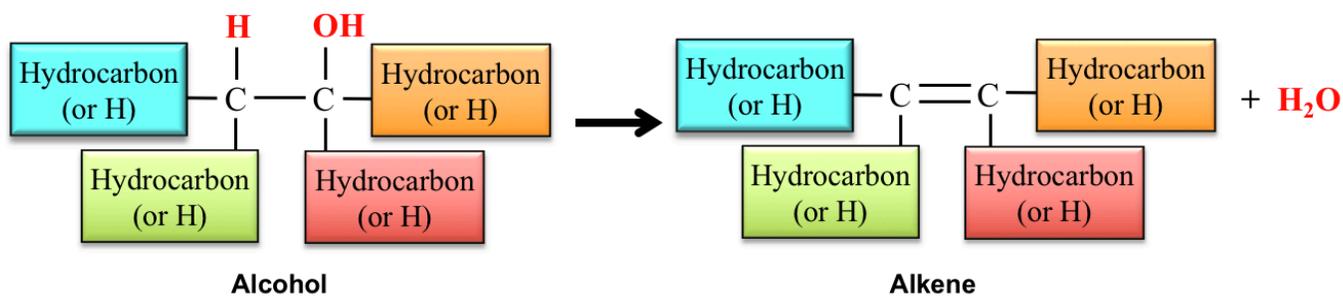
Example:



4) Dehydration of Alcohols

Dehydration is the reverse of hydration.

- Water (H_2O) is removed from an alcohol to form an alkene.

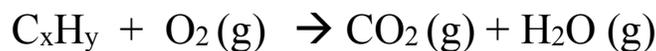


Example:



Combustion Reactions

- Hydrocarbons undergo combustion (react with oxygen O_2) to produce CO_2 (g) + H_2O (g)



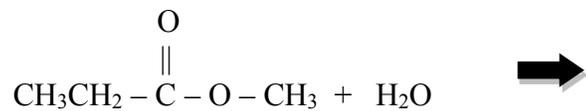
- Example: combustion of methane



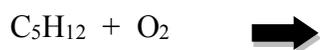
Problems

Complete the following reactions:

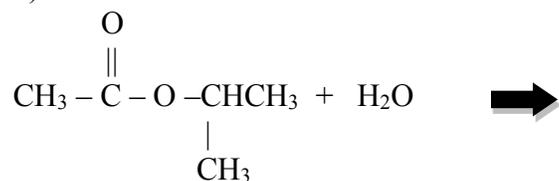
1)



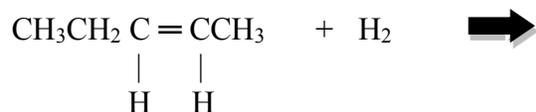
2) Complete and balance



3)

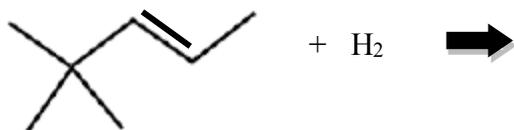


4)



Hint: If you are struggling with this one, draw the line bond structure of the reactant first!

5)



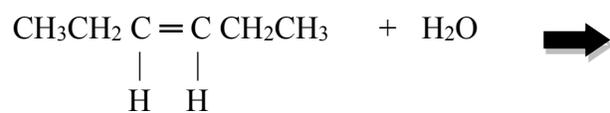
Hint: If you are struggling with this one, draw the line bond structure of the reactant first!

6)



7)

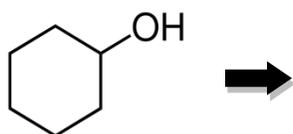
Chapter 6 Reactions Worksheet and Key



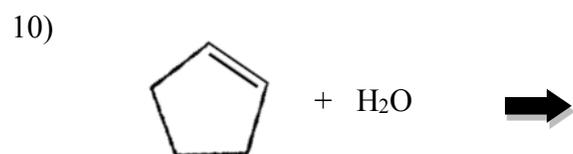
8) Dehydration:



9) Dehydration:



Hint: If you are struggling with this one, draw the line bond structure of the reactant first!



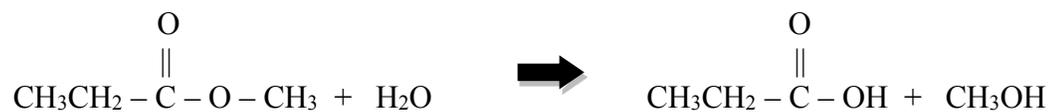
SEE NEXT PAGE FOR KEY

Chapter 6 Reactions Worksheet and Key

KEY

Complete the following reactions:

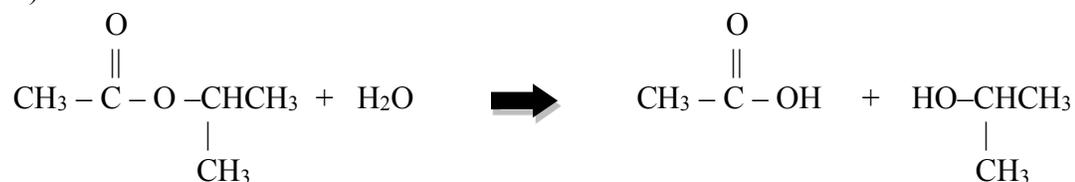
1)



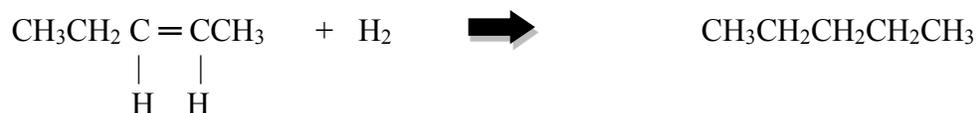
2) Complete and balance



3)

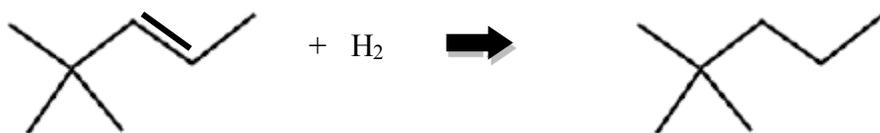


4)



Hint: If you are struggling with this one, draw the line bond structure of the reactant first!

5)



Hint: If you are struggling with this one, draw the line bond structure of the reactant first!

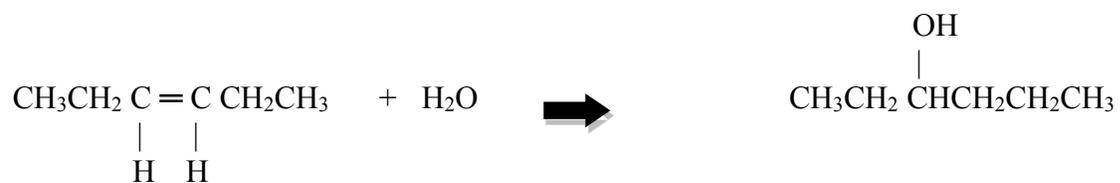
6)



Note $\text{CH}_2=\text{CHCH}_3$ is the exact same molecule as $\text{CH}_3\text{CH}=\text{CH}_2$ so either one is correct here!

Chapter 6 Reactions Worksheet and Key

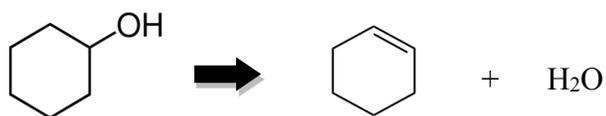
7)



8) Dehydration:



9) Dehydration:



Hint: If you are struggling with this one, draw the line bond structure of the reactant first!

10)

