**Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Homework Set #5**

1. Which alkene below is thermodynamically the most stable? 

A. 1-hexene

B. *trans*-3-hexene

C. *cis*-3-hexene

D. 2-methyl-2-pentene

2. The product(s) in the following reaction is(are)  
  
  

A. only *trans*-1-4-dimethylcyclohexane.

B. only *cis*-1-4-dimethylcyclohexane.

C. both *trans* and *cis*-1-4-dimethylcyclohexane.

D. methylcyclohexane.

3. What is the IUPAC name of the following compound?  
  
 

4. What is the IUPAC name of the following compound? Be sure to specify whether it is the E or Z isomer  
  


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5. Which of the following C6H12 isomers has the highest heat of combustion? 

A. 1-hexene

B. *trans*-3-hexene

C. *cis*-3-hexene

D. 2-methyl-2-pentene

6. Which of the following carbocations is(are) likely to undergo a rearrangement?  
  


7. Predict the major product of the following reaction.

H2SO4

heat

8. Draw the structure of (E)-2-bromo-2-pentene.

9. Rank the following isomeric alkenes according to their stabilities. (Most stable to

 least stable.

10. What is the IUPAC name of the following molecule?