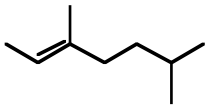
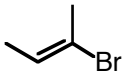
Chem 350
Jasperse Quiz, Chapter 7 Due:

1. How many elements of unsaturation are present for a molecule with formula $C_5H_5NO_2$?
   a. 0
   b. 1
   c. 2
   d. 3
   e. 4
   f. 5

2. Provide the proper IUPAC name for the alkene shown below.



3. Which of the following is correct for the geometry of the double bond shown below?



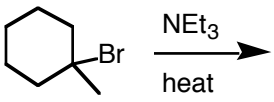
   a. E
   b. Z
   c. Neither E nor Z

4. Draw and name all structural and stereoisomeric <u>alkenes</u> (no alkanes or cyclic compounds) with the formula C_4H_8. (stereoisomers included)

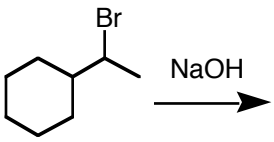
5. Choose the most stable alkene among the following. (may help to draw each of them out first…)

   a. 1-methylcyclohexene
   b. 3-methylcyclohexene
   c. 4-methylcyclohexene
   d. They are all of equal stability

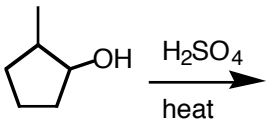
6. a) Draw <u>and circle</u> the <u>major alkene product</u> that would result from the following reaction.
   b) In addition, draw any other minor isomers that would form, but don't draw the same isomer twice.



7. a) Draw and <u>circle the major alkene product</u> for the following reaction. (There may be a lot of S_N2 product that forms as well, but you need not draw that.)
   b) In addition, draw any other minor isomers that would form, but don't draw the same isomer twice.



8. a) Draw and <u>circle the major alkene product</u> for the following reaction. (There may be some S_N1 product that forms as well, but you need not draw that.)
   b) In addition, draw any other minor isomers that would form, but don't draw the same isomer twice.
9. Draw a detailed, step-by-step <u>mechanism</u> for the pathway to the <u>major</u> product.



10. Provide the chemicals necessary for transforming 2-methylheptane (**A**) into 2-methyl-1-heptene (**C**), and draw the structure for the chemical **B** which you can make from **A** and which serves as a precursor to **C**. Above the arrows write in recipes for the **A** →**B** transformation and for the **B** →**C** transformation.