Instructions: Read the directions to each type of question carefully.

1. Give the systematic name for each of the following:

   a. \[ \text{Br} \]

   b. 

   c. 

   d. 

2. Draw the structure for each of the following:

   a. 2-methylpropene

   b. (Z)-4-ethyl-4-octene

   c. 5-chloro-1,3-cyclohexadiene

   d. (E)-3-ethyl-2-iodo-2-hexene
3. Rank the following alkenes from most stable to least stable:

a.  

b.  

c.  

d.  

4. Draw curved arrows to show the flow of electrons responsible for the conversion of the reactants into products:

\[
\text{H}_2\text{O}^- + \text{H} - \text{C} - \text{C} - \text{H} \rightarrow \text{H}_2\text{O} + \text{H} - \text{C} = \text{C} - \text{H} + \text{I}^- 
\]
5. Draw the two-step mechanism using curved arrows to show the flow of electrons for the reaction of cyclopentene with HBr.