1. Give names for the following structures. Be sure to use E/Z where appropriate.
2. How many degrees of unsaturation are in each of the above molecules?

3. Draw structures for each of the following names.

   2-methyl-1,3-butadiene
   4Z-2,3,3-trimethyl-1,4-octadiene
   cis-3,4-dibromocyclohexene
   1,3-cyclohexadiene
   methylenecyclobutane
   3Z-2,2-dimethyl-3-heptene

   2-ethyl-1-butene
   3E-3,7-dimethyl-1,3,6-octatriene
   trans-3-methyl-5-bromocyclohexene
   1,2-butadiene
   2,3-dimethyl-2-butene

4. Provide products for the following reactions.

   \[
   \begin{array}{c}
   \text{Cyclohexene} \quad \text{HBr} \rightarrow \\
   \text{1,2-Butadiene} \\
   \end{array}
   \]

   \[
   \begin{array}{c}
   \text{1-Octene} \quad \text{HI} \rightarrow \\
   \text{Cyclopentene} \\
   \text{1-Octene} \quad \text{HBr} \rightarrow \\
   \text{1-Octene} \\
   \text{Cyclohexene} \quad \text{excess HCl} \rightarrow \\
   \end{array}
   \]