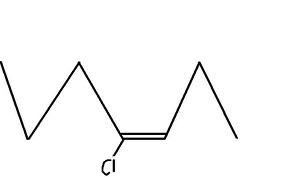
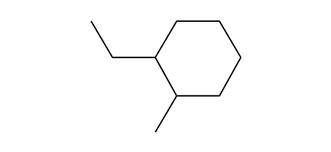
1. Alkenes and alkynes are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (saturated / unsaturated). Why?
2. What is the geometry about the carbons in the double bond of alkenes? Why?
3. Draw the difference between *cis* and *trans* isomers. (try 2-hexene). Is this a form of structural or conformational isomers?

**Nomenclature**

1. Draw each of the following molecules and give the molecular formula:
2. *trans*-3-methyl-3-heptene
3. *cis*-2,2-dimethyl-4-nonene
4. Name each of the following molecules and give the molecular formula:
   1.  b. 

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Reactions**

1. The following reactions all start from the same molecule, **2-butene**. 1) Draw this molecule, then 2) preform the following reactions on it
   1. Hydrogenation-

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ + H2 🡪 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* 1. Halogenation-

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ + Cl2 🡪 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* 1. Hydrohalogenation –

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ + HCl 🡪 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Draw and name isomers for C5H10