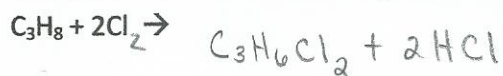


Review of reactions:

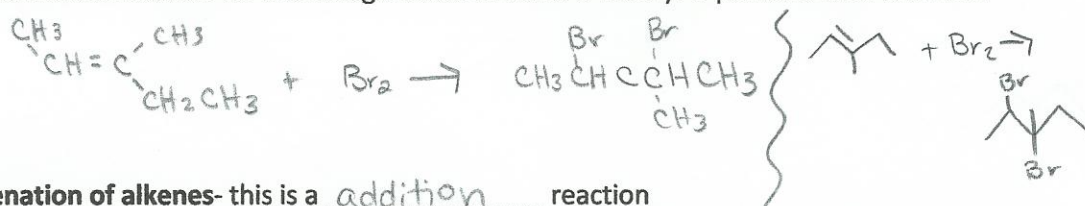
1. **Halogenation of alkanes**- this is a substitution reaction

a. Write the reaction for the halogenation of propane.



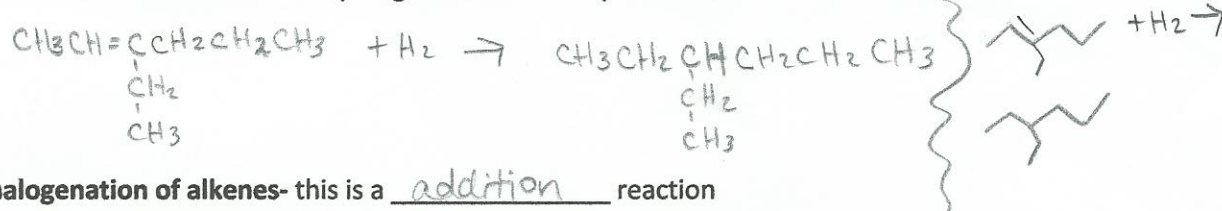
2. **Halogenation of alkenes**- this is a addition reaction

a. Write the reaction for the halogenation of *trans*-3-methyl-2-pentene with bromine.



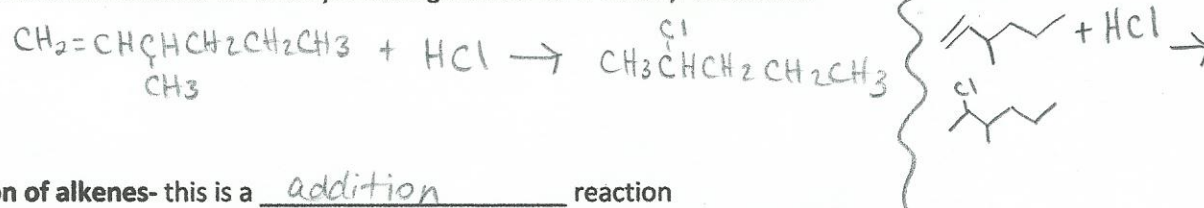
3. **Hydrogenation of alkenes**- this is a addition reaction

a. Write the reaction for the hydrogenation of 3-ethyl-2-hexene.



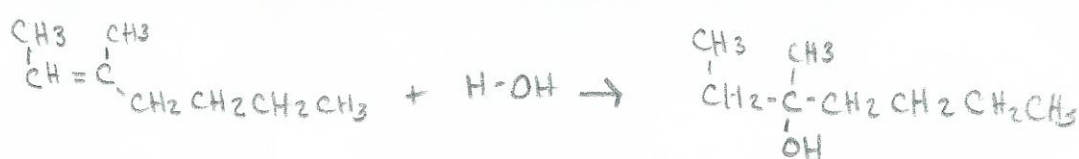
4. **Hydrohalogenation of alkenes**- this is a addition reaction

a. Write the reaction for the hydrohalogenation for 3-methyl-1-hexene.



5. **Hydration of alkenes**- this is a addition reaction

a. Write the reaction for the hydration of *trans*-3-methyl-2-heptene

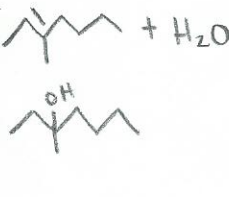


6. What is Markovnikov's Rule?

for the addition of H-X or H-OH across a double bond the carbon (involved in the double bond) that has the most directly attached hydrogens gets the H.

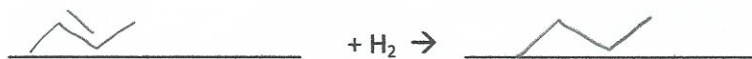
7. Review of molecular formulas:

- a. Alkanes $\text{C}_n\text{H}_{2n+2}$
 b. Cycloalkanes C_nH_{2n}
 c. Alkenes C_nH_{2n}
 d. Cycloalkenes $\text{C}_n\text{H}_{2n-2}$

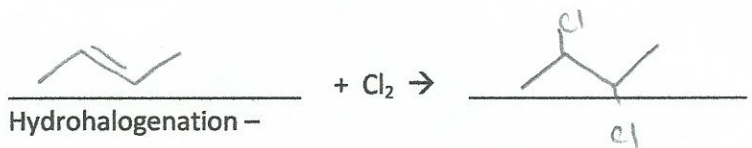


8. The following reactions all start from the same molecule, **2-butene**. 1) Draw this molecule, then 2) perform the following reactions on it

a. Hydrogenation-



b. Halogenation-



c. Hydrohalogenation -

