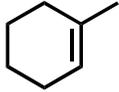
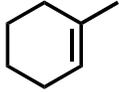
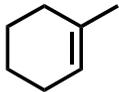
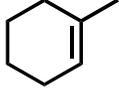
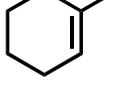
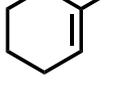
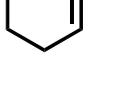
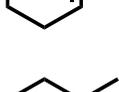
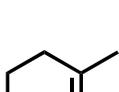
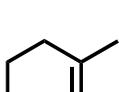


1.  $\xrightarrow{\text{H-Cl}}$
2.  $\xrightarrow{\text{Br}_2}$
3.  $\xrightarrow[\text{H}_2\text{O}]{\text{Cl}_2}$
4.  $\xrightarrow[\text{KHSO}_3]{\text{OsO}_4}$
5.  $\xrightarrow[\text{H}_2\text{SO}_4]{\text{H}_2\text{O}}$
6.  $\xrightarrow[2) \text{NaBH}_4]{1) \text{Hg}(\text{OAc})_2, \text{CH}_3\text{OH}}$
7.  $\xrightarrow{\text{CH}_2\text{I}_2, \text{Zn-Cu}}$
8.  $\xrightarrow{\text{CHCl}_3, \text{KOH}}$
9.  $\xrightarrow{\text{m-CPBA}}$
10.  $\xrightarrow[\text{D}_2]{\text{Pd/C}}$
11.  $\xrightarrow[2) \text{NaOH}, \text{H}_2\text{O}_2]{1) \text{BH}_3}$

Answers are on next page.

