

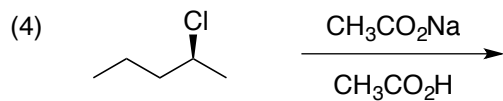
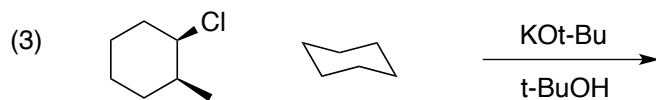
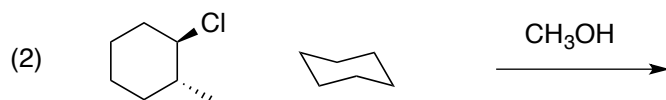
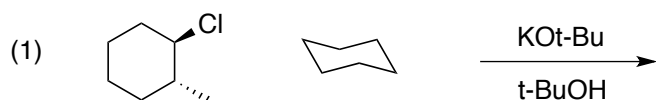
**ELIMINATION REACTIONS: E1 vs. E2**

The products of an elimination reaction, whether by E1 or E2, almost always look identical. The difference is that the E1 mechanism occurs with weak bases and the E2 mechanism occurs in the presence of strong bases. Also, there are stereochemical concerns in the E2 mechanism.

Use the examples of weak and strong bases to determine the products of each reaction

**Strong bases (E2)** – Alkoxides, Hydroxide

**Weak bases (E1)** – Water, Alcohols, Carboxylates



**SUBSTITUTION AND ELIMINATION REACTIONS:  
S<sub>N</sub>1 vs. S<sub>N</sub>2 vs. E1 vs. E2 vs. NR**

Below are reactions of alkyl halides with nucleophiles and/or bases. Some reactions will give only one product; others will give a mixture. Recall the specific conditions required for one reaction mechanism to be favored (except for E1).

S <sub>N</sub> 1 – tertiary alkyl halide	E1 – (always a mixture with Substitution)
S <sub>N</sub> 2 – methyl alkyl halide	E2 – potassium <i>tert</i> -butoxide, KO <i>t</i> -Bu, KOC(CH <sub>3</sub> ) <sub>3</sub>

If any one of those conditions is not met (for example, a secondary alkyl halide), determine whether the reagent is a nucleophile (substitution), base (elimination), or both.

Look out for non-leaving groups!

