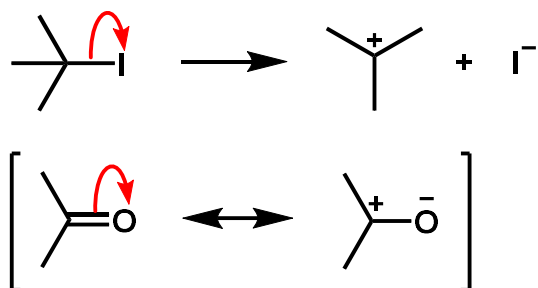


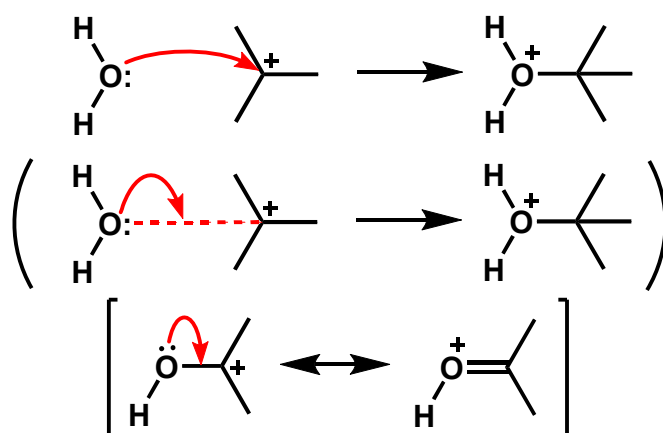
## 矢印のコツ

基本は3つ（ラジカルは除く）

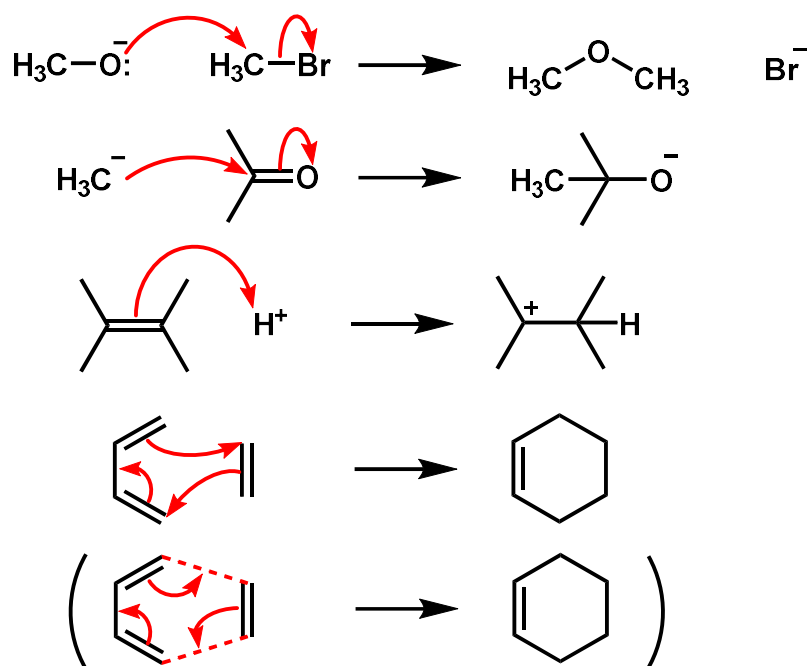
① 結合が切れる（ヘテロリシス）。



② 結合ができる。



③ 結合ができつつ、別の結合が切れる。

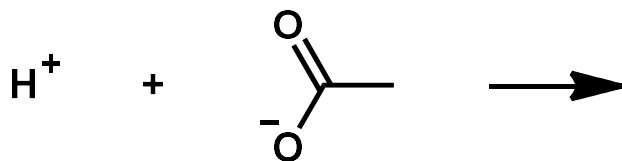


電子の流れを表す矢印

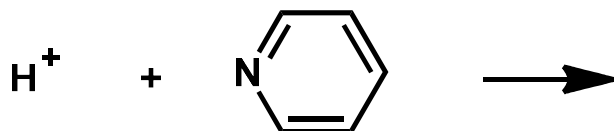
例：



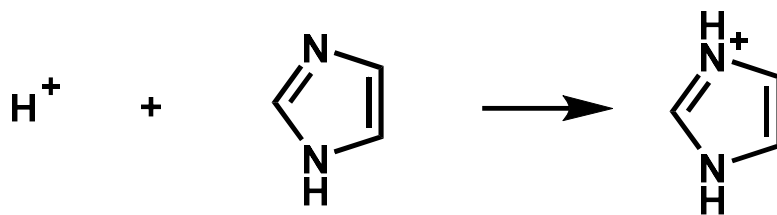
1



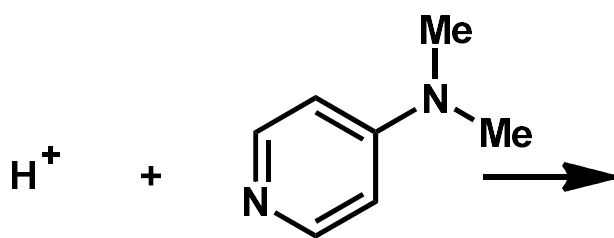
2



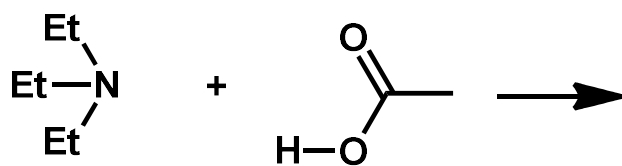
3



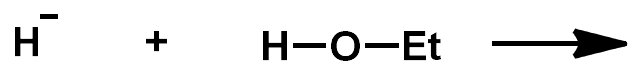
4



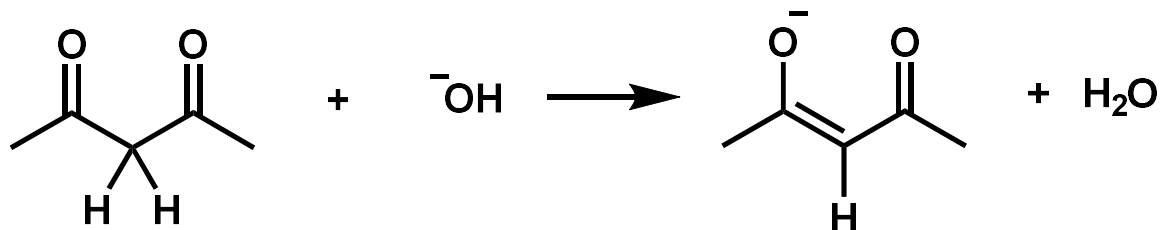
5



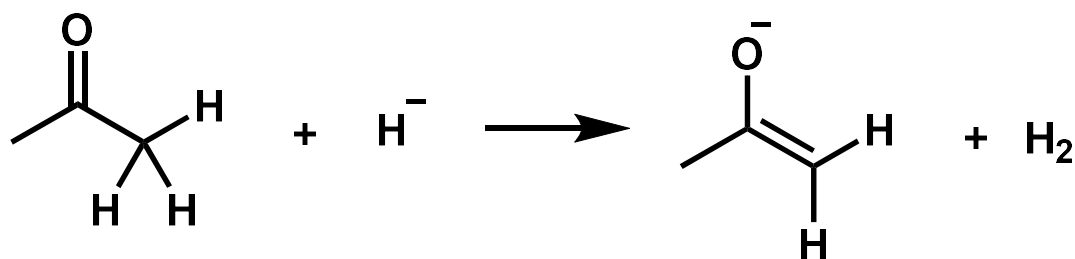
6



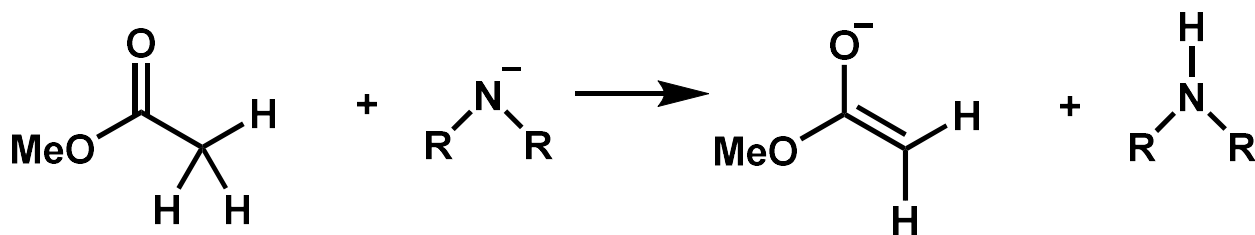
7



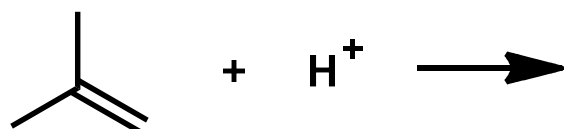
8



9

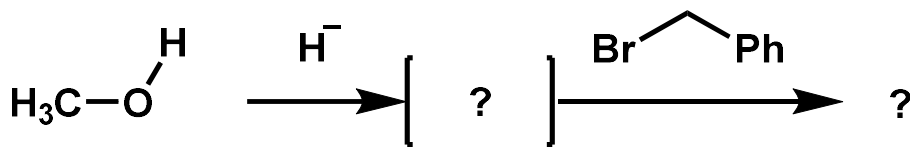


10



11	$\begin{array}{c} \text{H}_3\text{C} \\ \diagdown \\ \text{H}_3\text{C}-\text{N} \\ \diagup \\ \text{H}_3\text{C} \end{array} + \text{H}_3\text{C}-\text{I} \longrightarrow$
12	$\text{H}_3\text{C}-\text{O}^- + \begin{array}{c} \text{Br} \\   \\ \text{---} \\   \\ \text{Ph} \end{array} \longrightarrow$
13	$\begin{array}{c} \text{O}^- \\   \\ \text{---} \\ \diagdown \\ \text{---} \end{array} + \begin{array}{c} \text{Br} \\   \\ \text{---} \\   \\ \text{Ph} \end{array} \longrightarrow \begin{array}{c} \text{O} \\    \\ \text{---} \\   \\ \text{---} \\   \\ \text{Ph} \end{array}$
14	$\text{CH}_3^- + \begin{array}{c} \text{O} \\    \\ \text{H}_3\text{C}-\text{C}-\text{CH}_3 \end{array} \longrightarrow \begin{array}{c} \text{O}^- \\   \\ \text{H}_3\text{C}-\text{C}-\text{CH}_3 \\   \\ \text{CH}_3 \end{array}$
15	$\begin{array}{c} \text{O} \\   \\ \text{---} \\   \\ \text{---} \\ \diagdown \\ \text{---} \end{array} \text{MeO} \longrightarrow \begin{array}{c} \text{O} \\    \\ \text{---} \\   \\ \text{---} \\   \\ \text{---} \end{array} \text{MeO}$
16	$\begin{array}{c} \text{O}^- \\   \\ \text{---} \\ \diagdown \\ \text{---} \end{array} + \begin{array}{c} \text{O} \\    \\ \text{---} \\ \diagdown \\ \text{---} \end{array} \longrightarrow \begin{array}{c} \text{O} \\    \\ \text{---} \\   \\ \text{---} \\   \\ \text{---} \\ \diagdown \\ \text{---} \end{array} \text{O}^-$

生成物を記せ。また、電子の流れを表す矢印を用いて反応機構を示せ。



まとめ

電子の流れを表す矢印は……

電子豊富から電子不足へ

たのび、いしな



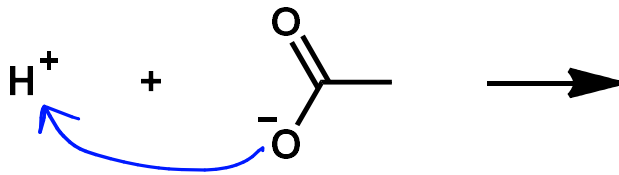
いしな

電子の流れを表す矢印

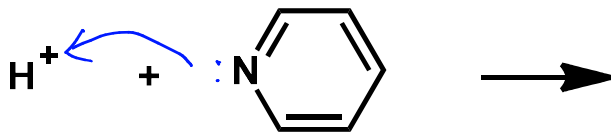
例：



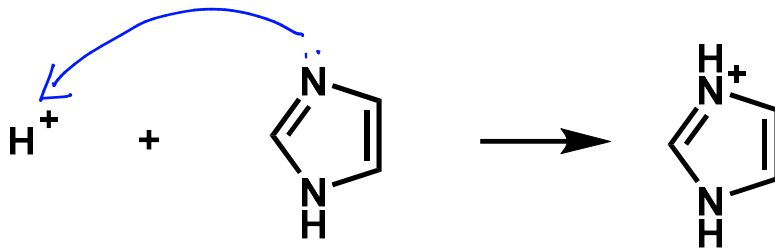
1



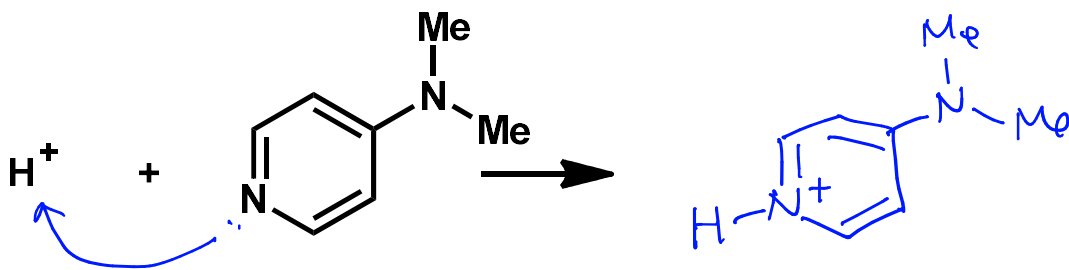
2



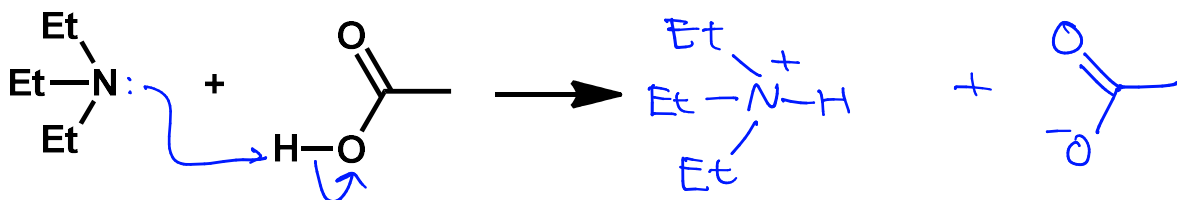
3

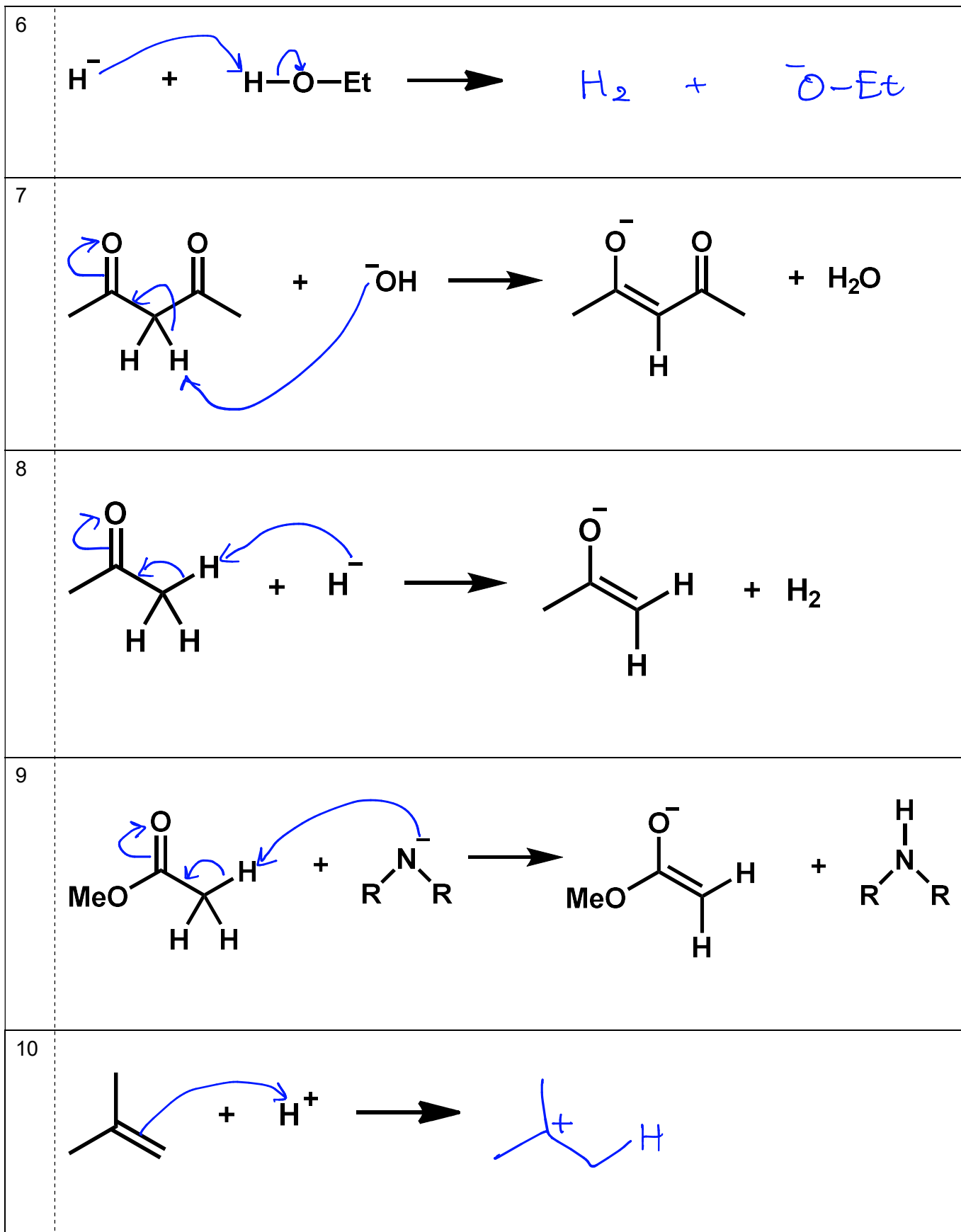


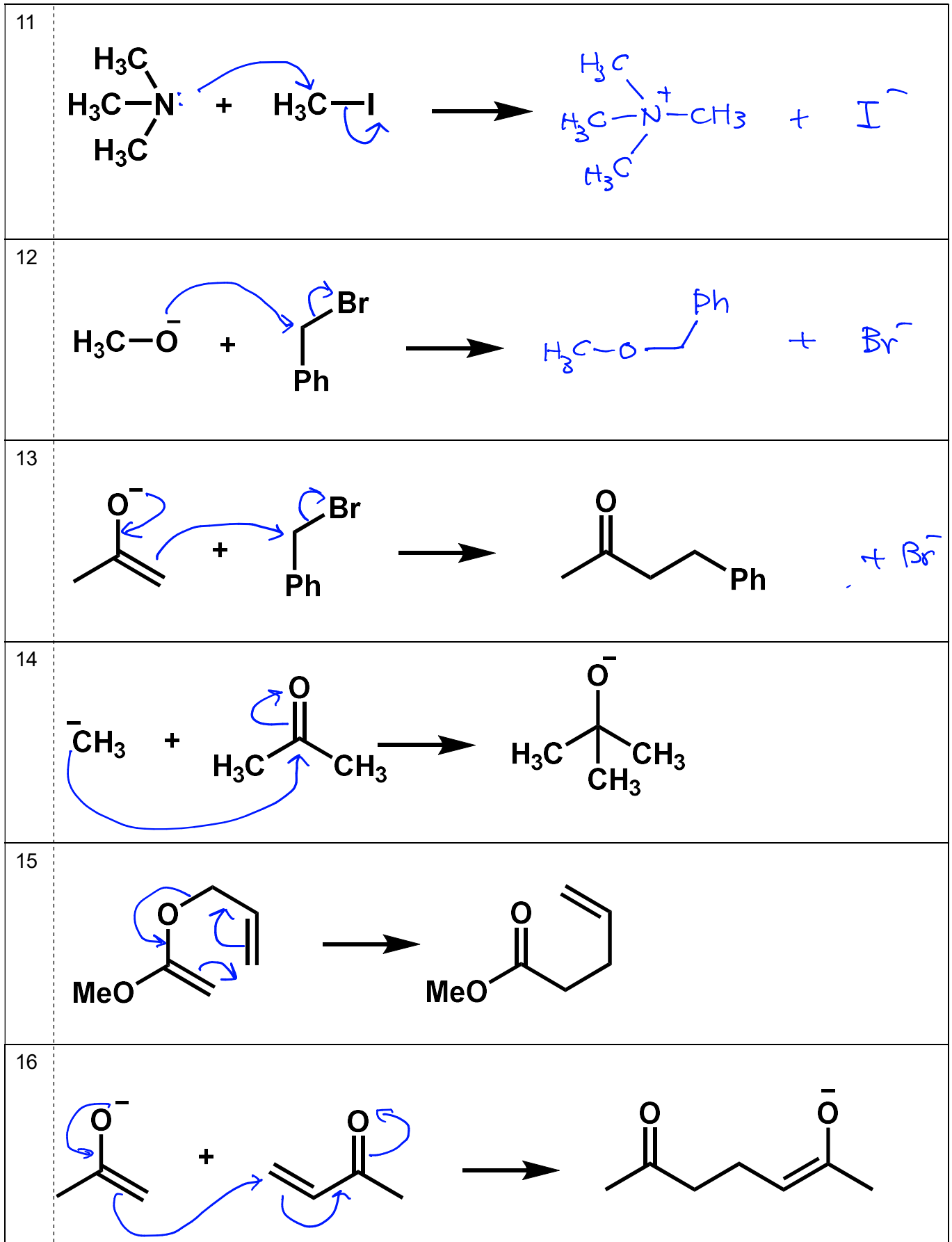
4



5









有機化学演習 確認テスト

生成物を記せ。また、電子の流れを表す矢印を用いて反応機構を示せ。

