1. Indicate all possible alkenes that may result when 3R-bromo-2,3-dimethylpentane is reacted with potassium hydroxide.

\[
\text{Br} \quad \xrightarrow{\text{KOH}} \quad \text{KOH}
\]

Give proper IUPAC names for all alkene products.

Rank the alkenes obtained in order of stability.

Which alkene is the favored product?

2. Draw the preferred monoalkene products when the following alkyl bromides are reacted with sodium methoxide.

\[
\begin{array}{c}
\text{Br} \\
\text{H}
\end{array} \quad \begin{array}{c}
\text{Br} \\
\text{Br}
\end{array} \quad \begin{array}{c}
\text{Br} \\
\text{Br}
\end{array}
\]

In the case with two bromines present, explain why one reacts faster than the other.

3. Indicate a method to synthesize 3-bromo-3-methylbut-1-ene in high yield starting with 2-methylbutane. You may use any other reagents.

\[
\text{?} \quad \xrightarrow{\text{Br}} \quad \text{?}
\]