1. (10 points) Show how the following molecule can be synthesized from compounds containing five or fewer carbons and ethyl acetoacetate.

\[
\begin{align*}
\text{ethyl acetoacetate} & \rightarrow ? \rightarrow \\
\end{align*}
\]

2. (10 points) Show the Haworth and conformational structures for \(\alpha-\)\-(D)-mannopyranose and methyl \(\alpha-\)\-(D)-mannopyranoside. For the conformational structures show both chair conformations. For credit, structures must be drawn clearly.