Design syntheses of the following compounds from the starting materials shown. Use any inorganic and organic reagents that you deem necessary. Chiral products may be made as racemic mixtures. (They do not have to be made optically active!) However, correct relative stereochemistry must be obtained where relevant.

1. 

2. 

3. 

4. 

from
5. \[
\text{HO} \quad \text{H} \quad \text{CO}_2\text{Et} \quad \text{HO} \quad \text{H} \quad \text{H} \quad \text{H} \quad \text{HO} \quad \text{H} \quad \text{from} \quad \text{C}_5\text{H}_4\]

6. \[
\begin{array}{c}
\text{Me} \\
\text{O} \\
\text{H} \\
\text{O} \\
\end{array} \quad \text{from} \quad \begin{array}{c}
\text{Me} \\
\text{O} \\
\text{OEt} \\
\end{array} \quad \text{and} \quad \begin{array}{c}
\text{Me} \\
\text{C} \\
\text{H}_2 \text{C} \\
\text{OH} \\
\end{array}
\]

7. \[
\begin{array}{c}
\text{Me} \\
\text{O} \\
\text{Me} \\
\end{array} \quad \text{from} \quad \begin{array}{c}
\text{H} \\
\text{O} \\
\text{Me} \\
\end{array}
\]