4. Give the products of the following reactions. Show stereochemistry in 3-D where necessary.

(a) \[ \text{HO-}\overset{\text{HO-}}{\text{OH}} \text{ Br}_2, \text{H}_2\text{O} \]
(b) \[ \text{HO-}\overset{\text{HO-}}{\text{OH}} \xrightarrow{\text{NaOH, xs}} \text{CH}_3\text{I, xs} \]
(c) \[ \text{HO-}\overset{\text{HO-}}{\text{OH}} \xrightarrow{\text{HCl}} \]
(d) \[ \text{HO-}\overset{\text{HO-}}{\text{OH}} \xrightarrow{\text{H}_2\text{O}^+} \xrightarrow{\text{H}_2\text{O}} \]

2. Draw the \( \alpha \) and \( \beta \) pyranose forms of L-fructose in their most stable chair conformations. Don't worry about which is \( \alpha \) and which is \( \beta \).

3. Draw all the products of complete hydrolysis.

4. Show how you would synthesize the following compound. Show all reagents and isolated intermediate compounds.

\[ \text{HO-}\overset{\text{HO-}}{\text{OH}} \xrightarrow{\text{CH}_3\text{OH, HCl}} \]
\[ \xrightarrow{\text{Bu}_4\text{NF, THF}} \]
\[ + \text{anomer} \]