2. Show how you would accomplish the following synthesis. Include all isolated intermediate compounds and reagents over the arrows.

\[ \text{OMs} \xrightarrow{\text{OH}} \text{CO} \]

6. Give the product(s) of the following reactions showing stereochemistry in 3-dimensions where necessary and all stereoisomers. Indicate for each reaction whether it is O (Oxidation), R (Reduction) or N (Neither).

(a) \[ \text{OH} \xrightarrow{\text{Na}_2\text{Cr}_2\text{O}_7, \ H_2\text{SO}_4, \ H_2\text{O}} \text{O} \]

(b) \[ \text{OTs} \xrightarrow{\text{NaI}} \]

(c) \[ \text{OH} \xrightarrow{\text{PBr}_3} \]

(d) \[ \text{OH} \xrightarrow{\text{PCC}} \]

4. Draw the mechanism and product of the following reaction showing all intermediates and electron-pushing arrows.

\[ \text{OH} \xrightarrow{\text{DCl}} \text{CO} \]

\[ + \overset{\text{O}}{\text{H}} \]

\[ + \text{H}_2\text{O} \]

\[ + \text{Cl} \]