1. Suggest mechanisms for the following, commenting on your choice of $S_N^1$ or $S_N^2$.

2. Predict the stereochemistry of these products.

3. State, with reasons whether these reactions are $S_N^1$ or $S_N^2$. 

1. Draw mechanisms for these reactions, explaining why the particular products are formed.

\[ \text{Cl} \xrightarrow{\text{MeOH}} \text{Cl} \quad \text{O} \xrightarrow{\text{HCl}} \text{OH} \quad \text{Cl} \]

2. Describe the stereochemistry of the products of these reactions.

\[ \text{Cl} \xrightarrow{\text{LiAlH}_4} \text{S} \quad \text{O} \xrightarrow{\text{base}} \text{OH} \quad \text{O} \]

3. State, with reasons whether these reactions are $S_N1$ or $S_N2$.

\[ \text{H} \xrightarrow{n-\text{PrOH}} \text{OH} \quad \text{H} \xrightarrow{n-\text{PrO}^-} \text{O} \]