1) Predict the product of the following reaction (2 points).

\[ \text{EtOH} \quad \text{H}_2\text{SO}_4 \]

2) Show the reagent(s) necessary to carry out the following reaction (2 points).

\[ \text{PhOH} \quad \rightarrow \quad \text{PhCOH} \]

3) Show the reagents necessary to carry out the following synthesis (6 points).

\[ \rightarrow \quad \text{product} \]