4A) (10 pts) Provide a <u>complete</u> mechanism for the following reaction. Pay close attention to details, including lone pairs, formal charges and the use of curved arrows.

$$O$$
 + OH OH OH OH

4B) (4 pts) Why does the following synthesis fail? What is formed instead of the desired product?

Br 1) Mg
$$\longrightarrow$$
 OH HO HO (not formed)