1. Show the products of 4 of the following 5 reactions (2.5 points each, 10 points total). **There will be no partial credit to this question, so choose wisely.**

   a. \( \text{O} \)
   b. MeOH
   c. LiNi\(\text{Pr}_2\)
   d. \( \text{H}_2\text{SO}_4 \)
   e. \( \text{H}_2\text{O} \)

2. Show the reagents necessary to carry out 4 of the following 5 reactions (2.5 points each, 10 points total). **There will be no partial credit, so choose wisely.**

   a. \( \text{O} \)
   b. MeOH
   c. \( \text{H}_2\text{O} \)
   d. \( \text{H}_2\text{O} \)
   e. \( \text{H}_2\text{O} \)

3. Predict the products of 3 of the following 4 reactions, and use a mechanism to support your answer (10 points each, 30 points total).

   a. \( \text{O} \)
   b. \( \text{H}_2\text{O} \)
   c. \( \text{H}_2\text{O} \)
   d. \( \text{H}_2\text{O} \)

4. Show a mechanism for 3 of the following 4 transformations (10 points each, 30 points total)

   a. \( \text{OH} \)
   b. \( \text{MeOH} \)
   c. \( \text{H}_2\text{SO}_4 \)
   d. \( \text{H}_2\text{O} \)
5. Propose a series of reactions for carrying out the following transformation, starting from isopropanol and any other carbon-based reagents you need (10 points each, 20 points total)