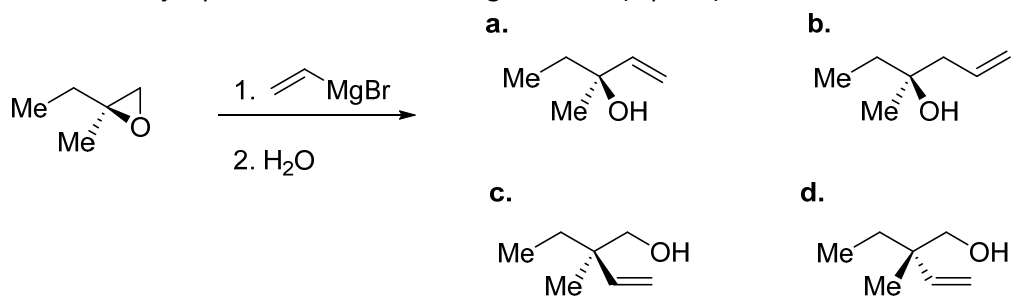
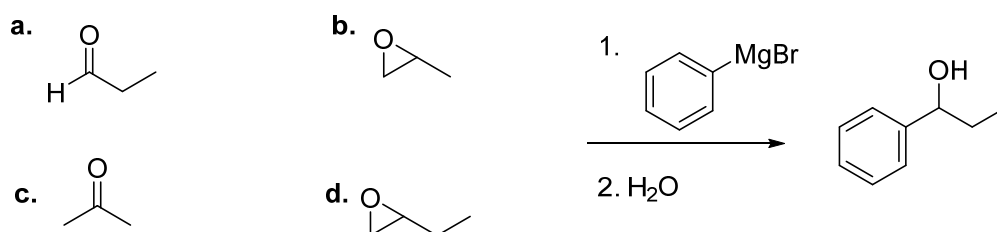


Name: _____

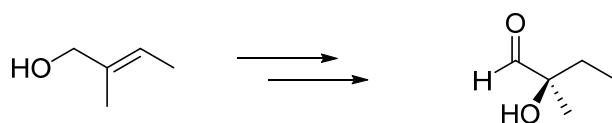
1. Circle the major product for the following reaction. (1 point)



2. Circle the starting material for the following reaction. (1 point)



3. Provide an asymmetric synthesis for the following transformation. (4 points)



4. a. Provide a mechanism to account for the following equilibrium.
- b. Predict which direction the equilibrium should favor and briefly explain your choice. (4 points)

