1. (10 points) Write the structures of $\bf A$ and $\bf B$. Absolute configuration is not important, but relative configuration is.

$$CO_2Et$$
 N_2
 $CU cat$
 CO_2Et
 N_2
 $C_8H_{14}O_2$
 CO_2Et
 CO_2Et
 OH

2. (10 points) Deduce the structure of C, and draw an arrow-pushing mechanism for its formation.

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3. (10 points) Draw an arrow-pushing mechanism for the conversion of ${\bf D}$ to ${\bf E}$.