Group Meeting Problems

Problem 1: Please provide a mechanism for the following transformation.

$$\begin{array}{c|c} & & & & \\ & & & \\ \hline & & & \\ & & & \\ \hline & & \\ &$$

Problem 2: For one of the new students.

In honor of my undergraduate advisor's recent Nature Chemistry paper please provide a mechanism and show the intermediate of the following transformation of this starting material to a short polyyne.