1. Account for these contrasting results.

2. Draw mechanisms for these two elimination reactions of epoxides.

3. Suggest mechanisms for these reactions.
1. Suggest mechanisms for these two eliminations. Why does the first one give a mixture of products and the second a single product?

Whether the reaction is E1 or E2, there are two sets of hydrogens which can be lost.

The reaction produces a tertiary cation from which six hydrogens will be lost giving the same product.

2. Explain the position of the double bond in the products of these reactions. The starting materials are enantiomerically pure. Are the products enantiomerically pure?
3. Explain the stereochemistry

Lindlar’s catalyst gives a cis product.

\[\text{Lindlar’s catalyst (Pd/CaCO}_3\text{)}\]

\[\begin{align*}
\text{O}_2\text{Me} & \text{C} & \text{H}_3\text{C} & \text{OH} \\
\text{Ph} & \text{H}_2 & \rightarrow & \text{O}_2\text{Me} & \text{H} & \rightarrow & \text{O} \\
& & & \text{C} & \text{H}_3\text{C} & \text{Ph} & \rightarrow & \text{C} & \text{H}_3\text{C} & \text{Ph} \\
\end{align*}\]