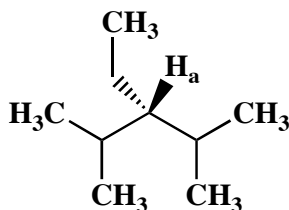


Quiz #1

1. (5 points)

Label all the sets of chemically equivalent protons for the following alkane. Then draw an annotated tree diagram for proton H_a. Specify, but do not quantify all the coupling constants in the tree diagram.



2. (5 points)

Draw the specific reagents necessary to effect the following transformation. Distinguish individual steps clearly and draw all stable synthetic intermediates. (N.B. Do **not** draw mechanisms.) Finally, explain why the target is racemic. In particular, state which reactions in your synthesis yield racemic products and why those outcomes are expected.

