INTOCHEMISTRY / ORGANIC CHEMISTRY

Assign E/Z Alkene Stereochemistry

STUDENT WORKSHEET

Name: _____ Date: _____

Explain the reasoning behind every answer. Show stereochemical drawings when asked.

1. (E)-but-2-ene: Both double-bond carbons bear CH3 and H; methyl groups are opposite sides. Which group has higher priority on each alkene carbon?

2. What is the proper alkene designation?

3. (Z)-but-2-ene: Both double-bond carbons bear CH3 and H; methyl groups are on the same side. Can this double bond have an E/Z label?

4. Which descriptor is correct?

5. But-1-ene: CH2=CH-CH2-CH3. What substituents are on the terminal CH2 carbon?

6. Which label is appropriate?

7. Priorities beyond cis/trans: One alkene carbon bears Br and H, the other bears CH2OH and CH3. Which has higher priority on the Br/H carbon?

8. What determines E or Z?