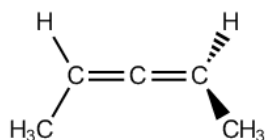
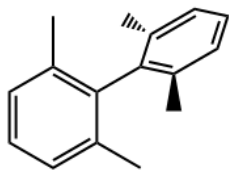


CONCEPT: ATROPISOMERS

Molecules that contain *NO chiral centers* yet are chiral due to their inability to freely _____



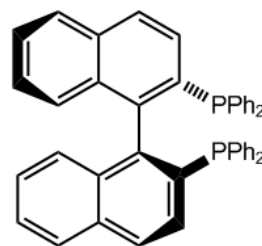
Allenes



Substituted Biphenyls



trans-cyclooctene



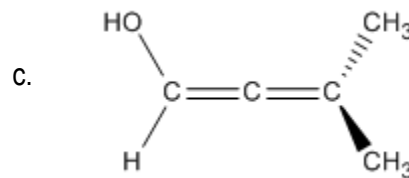
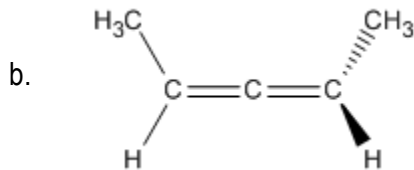
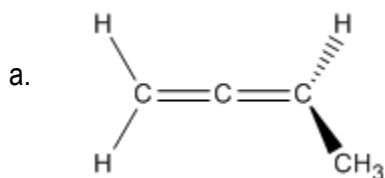
BINAP

1. Allenes

Use TEST 2 to identify trigonal centers (a type of stereocenter):

- ☐ Visualize the allene as a big double bond. If it is able to form ____ or ____ isomers, it is _____
- ☐ Remember we stated that trigonal centers are *achiral* if they pass this test. Allenes are different.

EXAMPLE: Which of the following allenes is chiral?



2. Substituted Biphenyls

These are chiral if all substituents are in the *ortho*- position, and if none of the rings have two of the same group on them.

EXAMPLE: Which of the following biphenyls is chiral?

