

Self Test 3 (Unit 9)

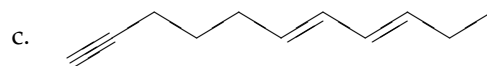
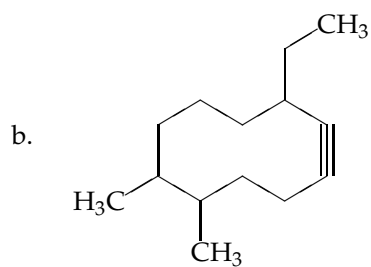
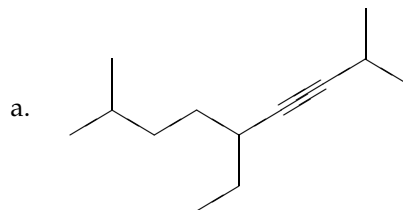
1. Provide structures for the following compounds:

a. 3,4,5-trimethylcyclooctyne

b. hex-2-en-4-yne

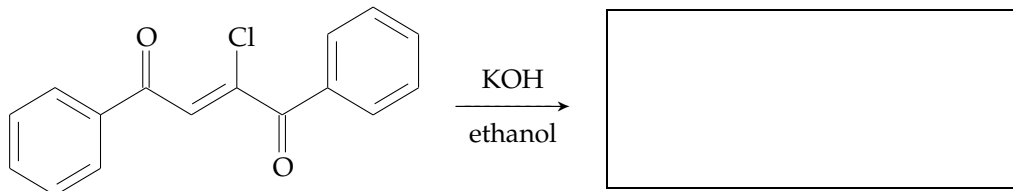
c. 4-ethynylcycloheptene

2. Provide complete IUPAC names for the following compounds, including stereochemical designations (i.e., *E* or *Z*) where appropriate.

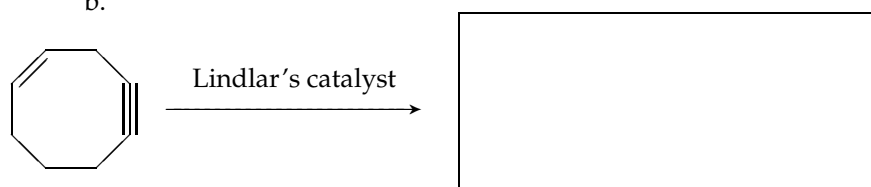


3. For each of the following reactions, provide the missing starting material, reagent or product. Indicate any stereochemistry where appropriate.

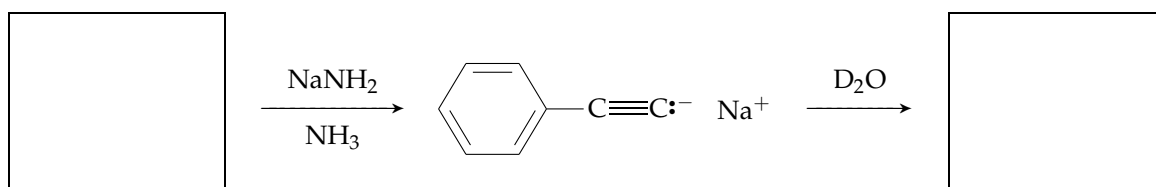
a.



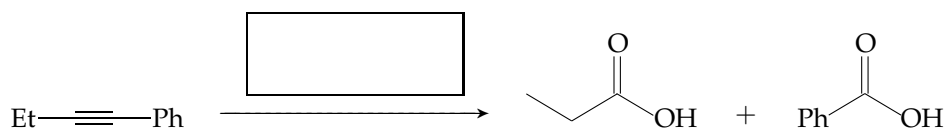
b.



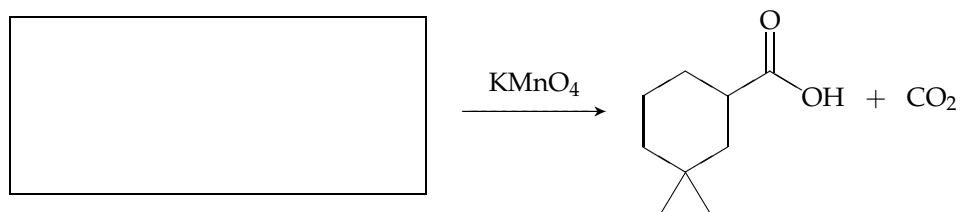
c.



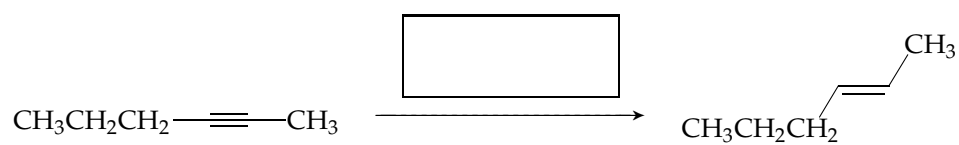
d.



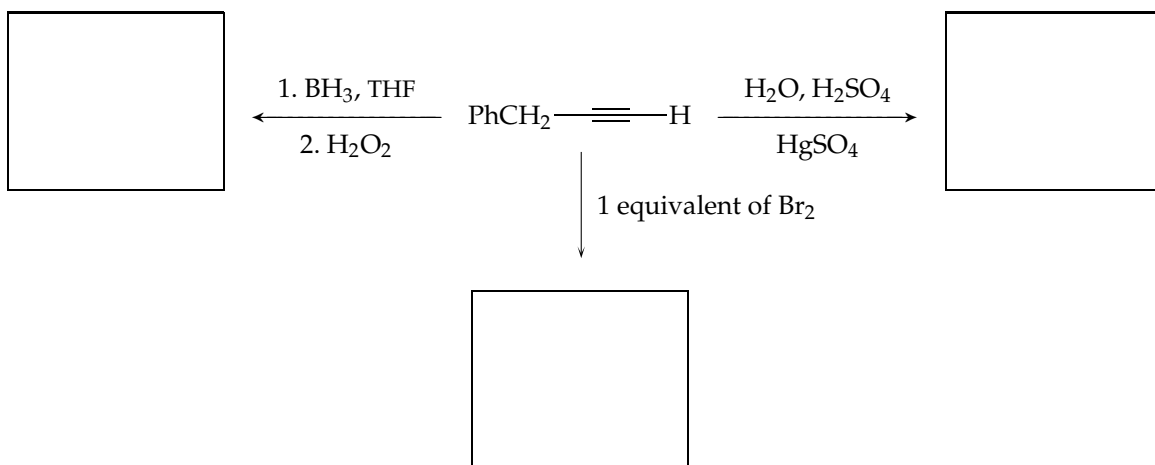
e.



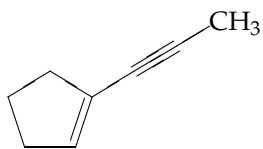
f.



g.



4. Using a terminal alkyne and an alkyl halide of your choice, describe (using appropriate chemical equations) how you would prepare 1-prop-1-ynylcyclopentene, shown below. You may assume access to any necessary inorganic reagents.



1-prop-1-ynylcyclopentene

5. Indicate whether the hydration of 1-butene (shown below) should proceed to yield an optically active product, or a racemic mixture. Explain your answer by considering the identity and structure of the product as well as any reactive intermediates.

