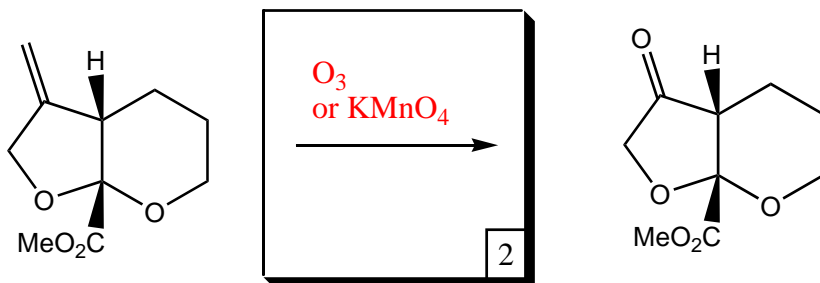


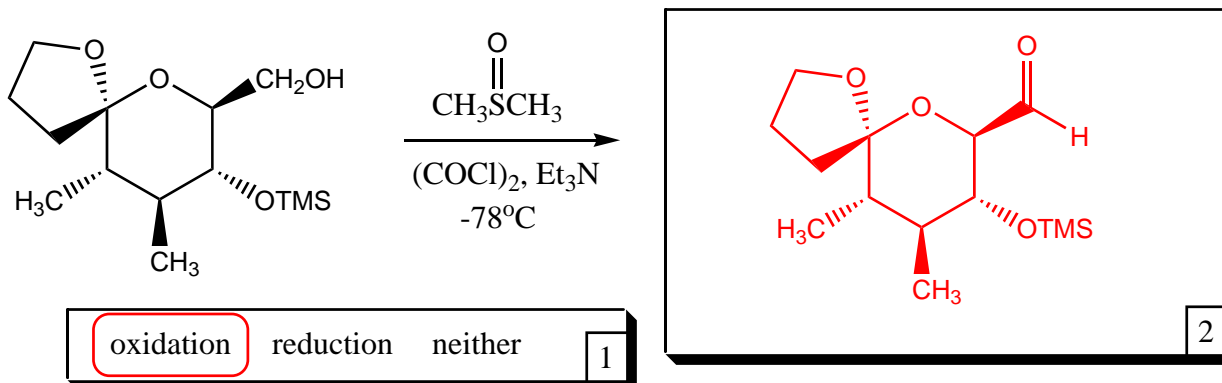
1. Complete the following reactions and classify each as *oxidation*, *reduction*, or *neither*:

a. Synthesis of the fungal metabolite *Benesudon* (*Org. Lett.* **2005**, 7(25), 5581-5583).



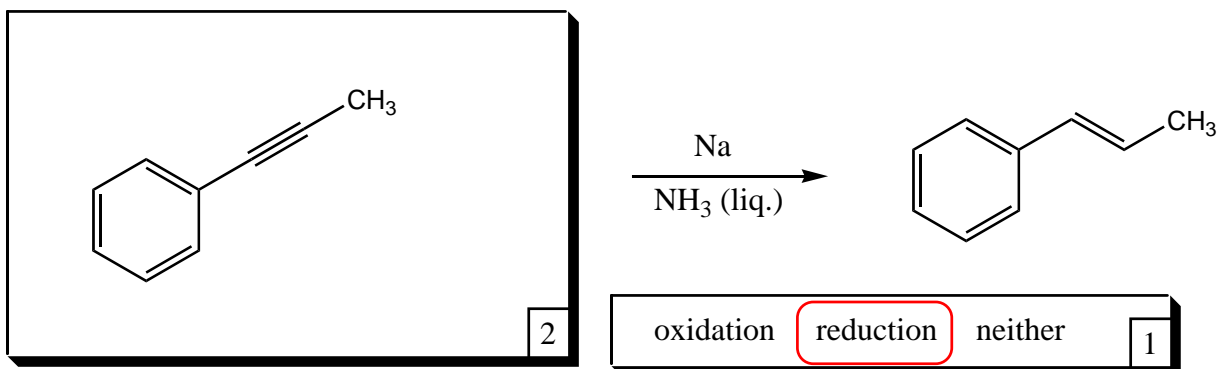
oxidation reduction neither 1

b. Synthesis of part of the neurotoxin *Ciguatoxin CTX3C* (*Tetrahedron Lett.* **2005**, 46, 8279-8283).

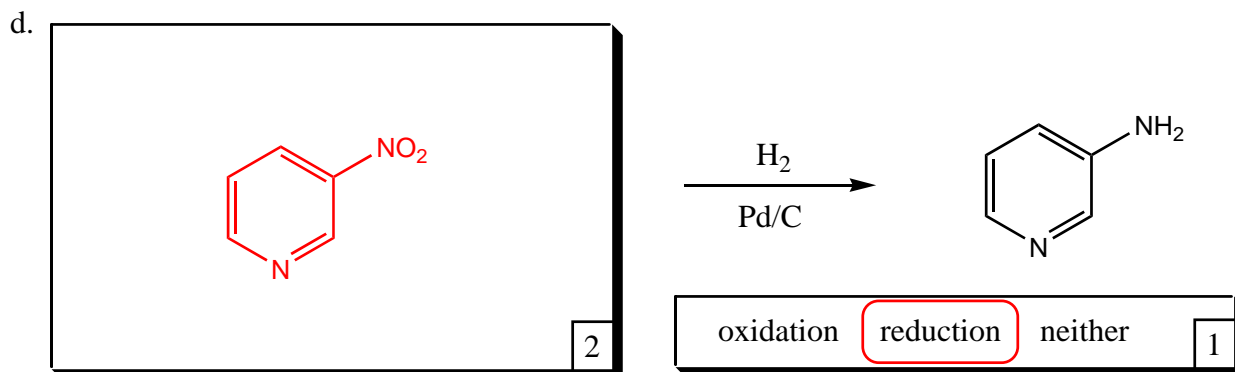


oxidation reduction neither 1

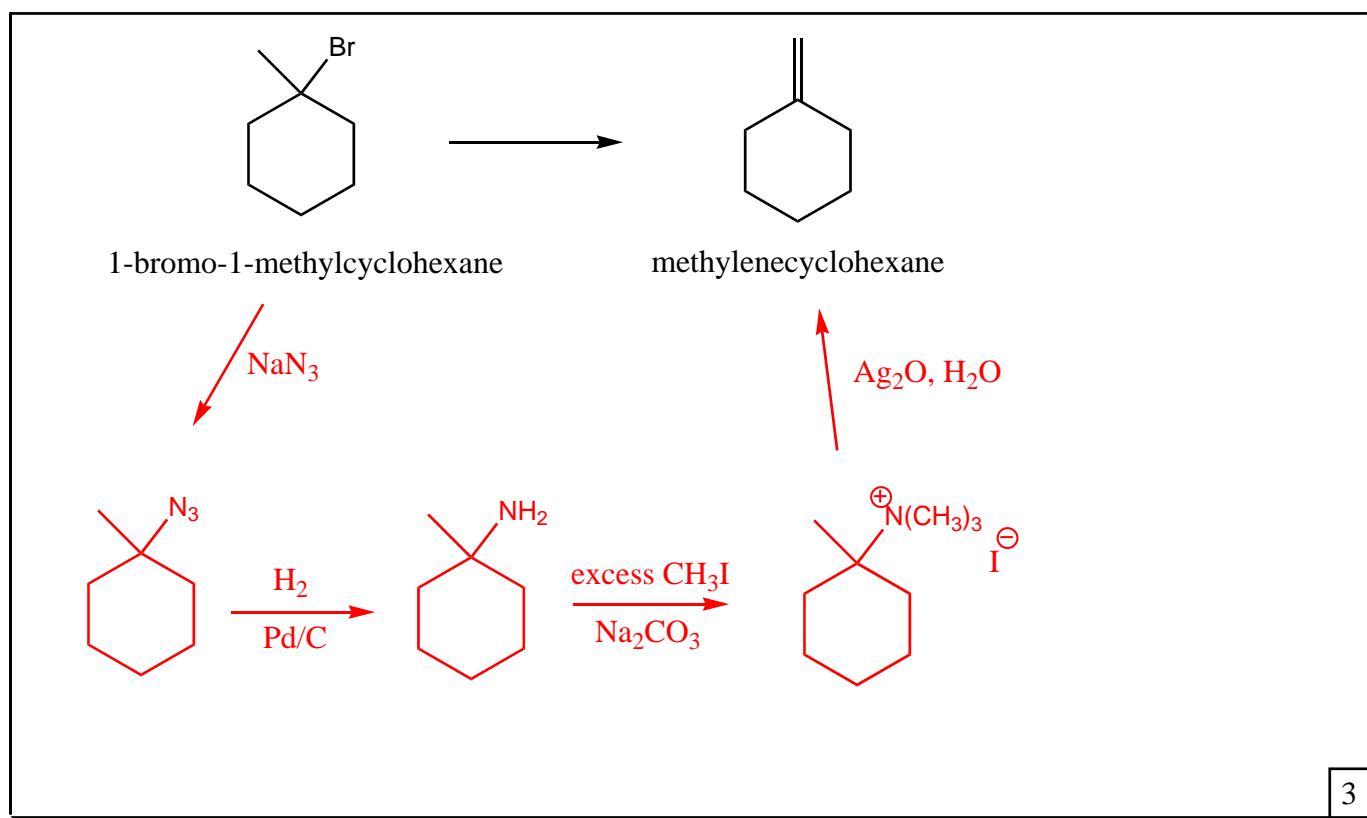
c.



oxidation reduction neither 1



2. Propose a synthesis of methylenecyclohexane from 1-methyl-1-bromocyclohexane:



3. The Fischer projection of galactose is shown below. Determine whether this is D-galactose or L-galactose and fill in the boxes with Haworth projections of the proper pyranoses.

