

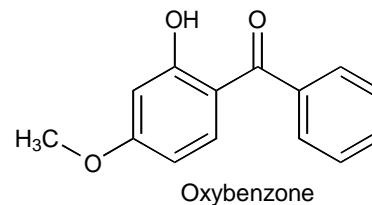
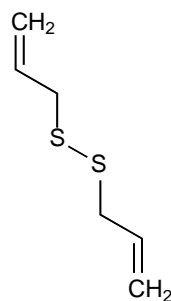
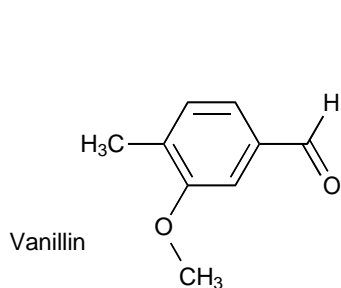
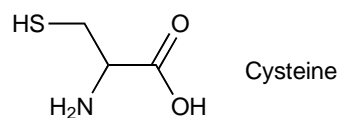
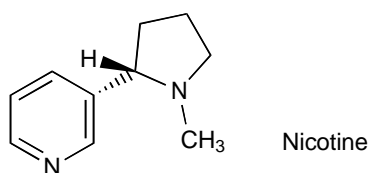
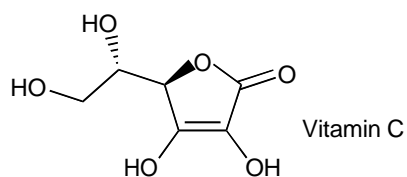
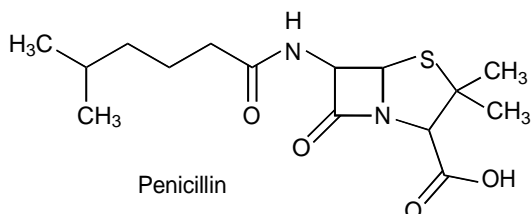
Practice Problems for Exam 4

Chem 60

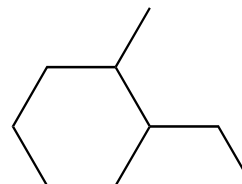
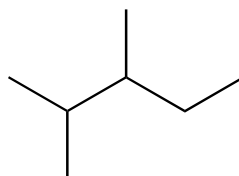
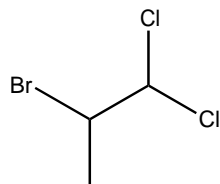
Fall 2017

This is not meant to be a comprehensive review.

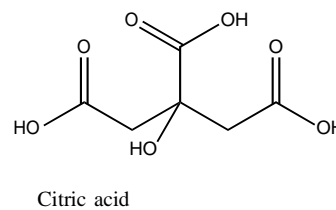
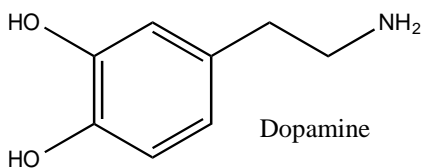
1. Review the functional groups. Then circle and label the functional groups in the molecules below. In one or two cases, there are functional groups we have not learned (you do not need to circle or label these).



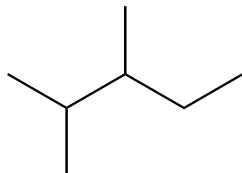
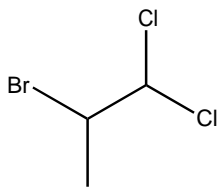
2. Mark the chiral carbons in each molecule below with an asterisk:



3. Redraw the structures of the following organic molecules at neutral pH:

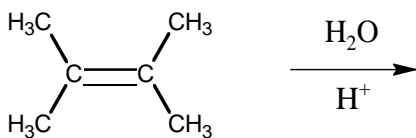


4. Draw **both** enantiomers of each molecule below.

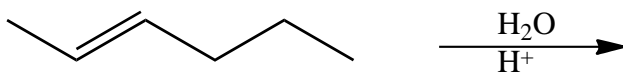


5. Draw the organic product of each reaction given below

a.

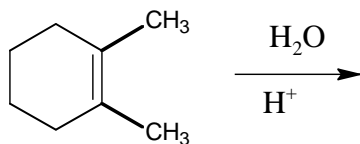


b.

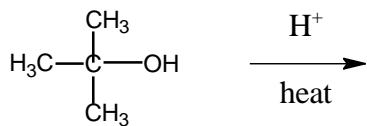


two possible products

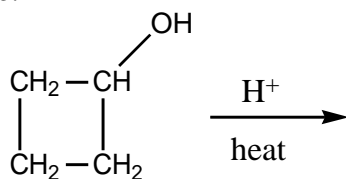
c.



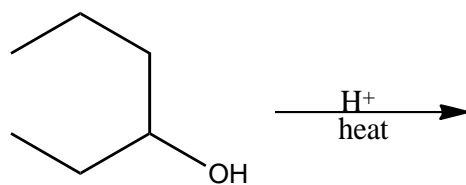
d.



e.

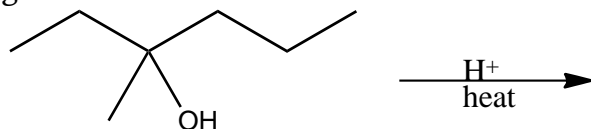


f.



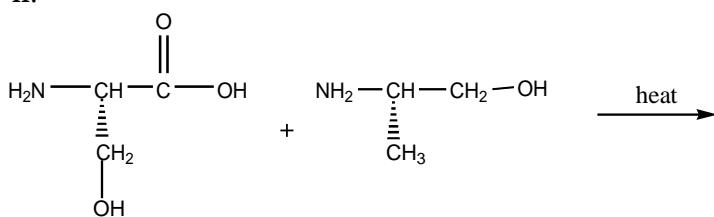
two possible products

g.

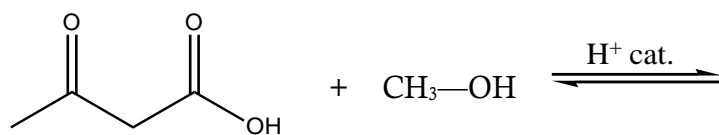


three possible products

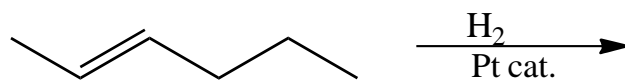
h.



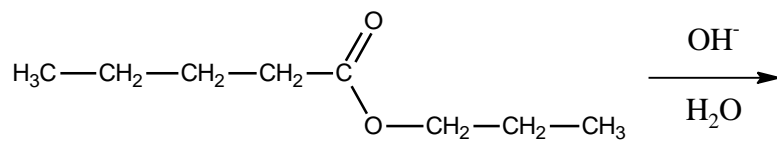
i.



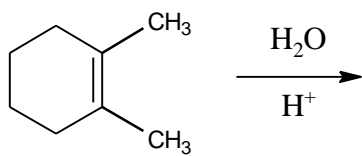
j.



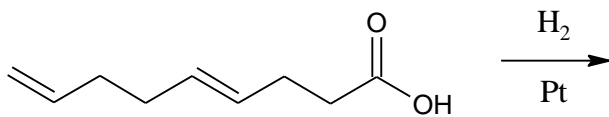
k.



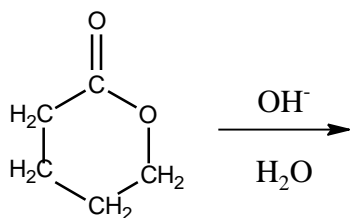
l.



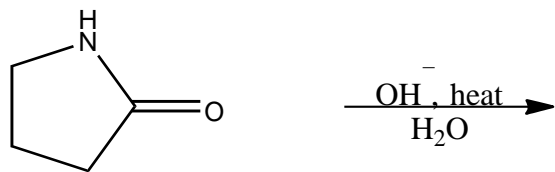
m.



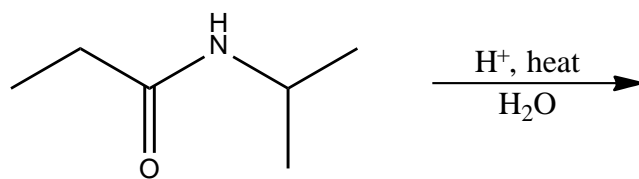
n.



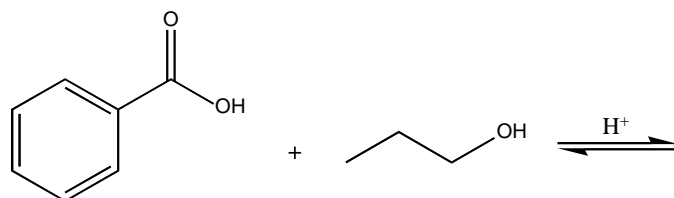
o.



p.



q.



r.

