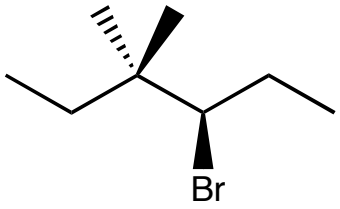
Name _____ Test 3

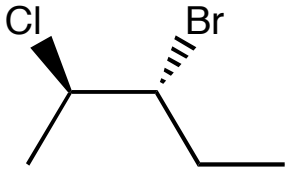
PHYS 0201 (Organic) Fall 2006

1. (6 pts. each) For each of the following molecules, mark the chiral centers with a star and determine the configuration of the chiral centers.

a.



b.



1. _____

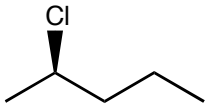
2. _____

3. _____

4. _____

2. (2 pts. each) Which of the following molecules is chiral?

a.



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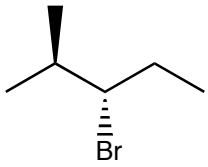
b.



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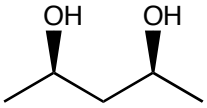
c.



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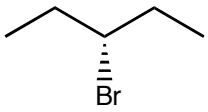
5. _____

6. _____

7. _____

d.



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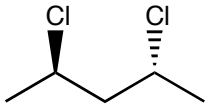
e.



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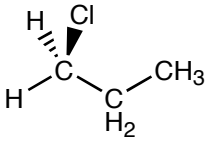
f.



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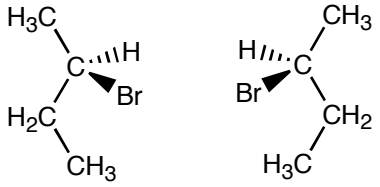
8. _____

9. _____

3. (3 pts. each) For each pair of molecules, determine whether the molecules are diastereomers, enantiomers, or different views of the same molecule.

a.



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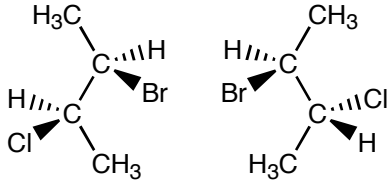
b.



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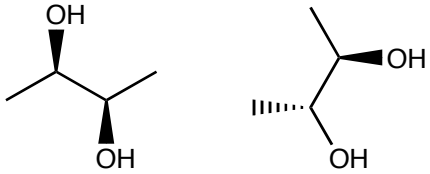
c.



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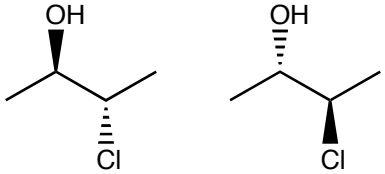
d.



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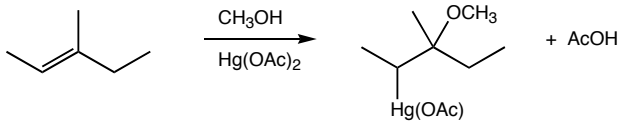
4. (12 pts.) Does the following reaction occur via a syn or anti addition? Draw a mechanism and explain your answer.

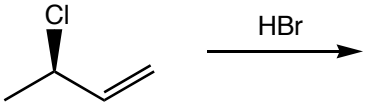


5. (10 pts.) Draw the following molecules

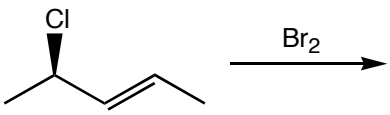
a. *R*-2-bromopentane	b. (2*S*,3*R*)-3-chloro-2-butanol

6. (6 pts. each) Predict the products of the following reaction. Remember to indicate the stereochemistry of the product.

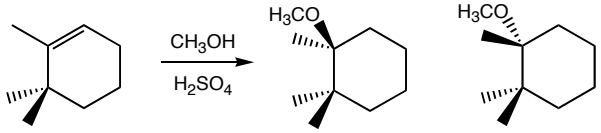
a.



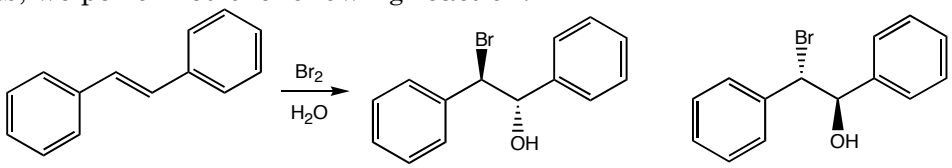
b.



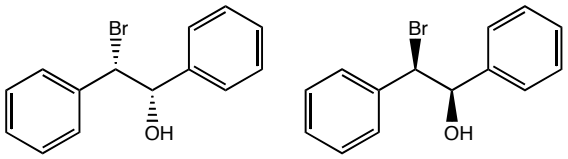
7. (12 pts.) Draw the intermediate for the following reaction and explain why the following products are formed in a 50/50 mixture.



8. (6 pts.) In lab, we performed the following reaction:

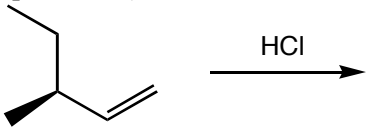


How could we have made the other pair of enantiomers, which are drawn below?



9. (6 pts. each) Would the following reactions produce a pair of enantiomers or diastereomers?

a.



b.