

Name: _____

CHEMISTRY 3311, Fall 2000
Professor Walba
Second Hour Exam
October 26, 2000

scores:

- 1)
 - 2)
 - 3)
 - 4)
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This is a closed-book "open model" exam. You may use models, but no notes or books. Please put all your answers on the test. Use the backs of the pages for scratch.

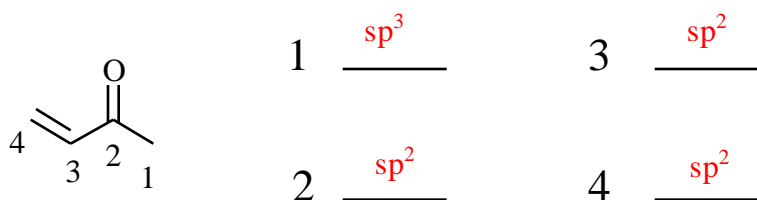
PLEASE read the questions carefully!

Partial Periodic Table

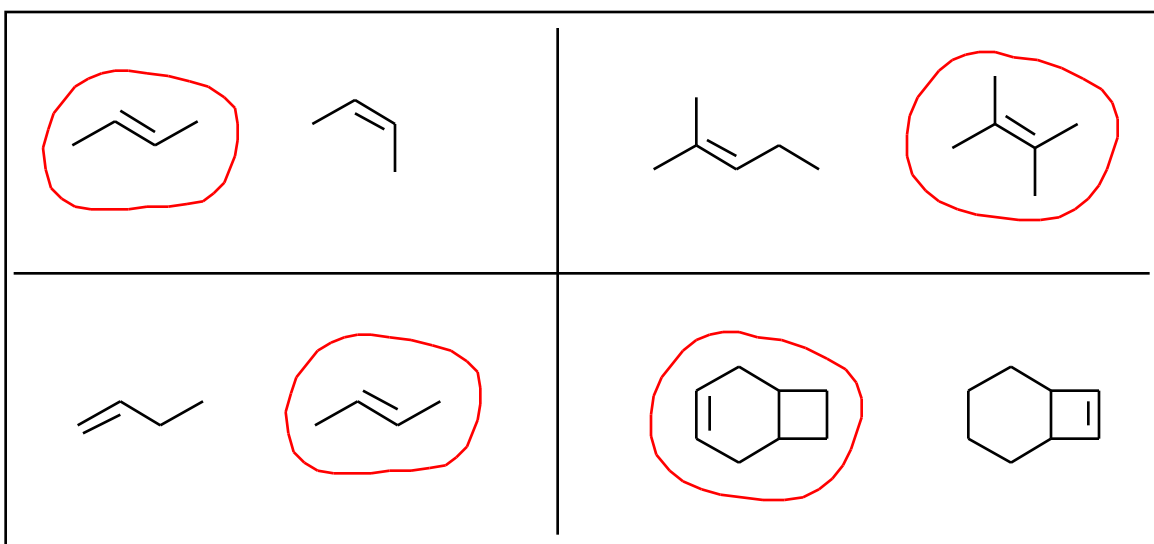
1A							8A
1 H	2A	3A	4A	5A	6A	7A	2 He
3 Li	4 Be	5 B	6 C	7 N	8 O	9 F	10 Ne
11 Na	12 Mg	13 Al	14 Si	15 P	16 S	17 Cl	18 Ar
						35 Br	
						53 I	

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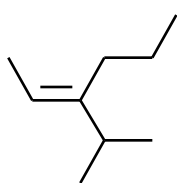
1) (20 pts) a) Indicate the hybridization of each carbon in the following structure.



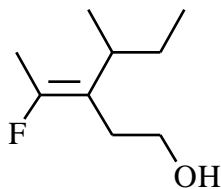
b) For each of the following pairs of isomeric alkenes, circle the more stable isomer.



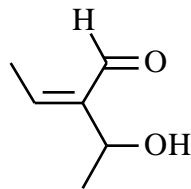
c) Label the stereochemistry of each of the following alkenes as E or Z.



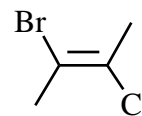
E



E



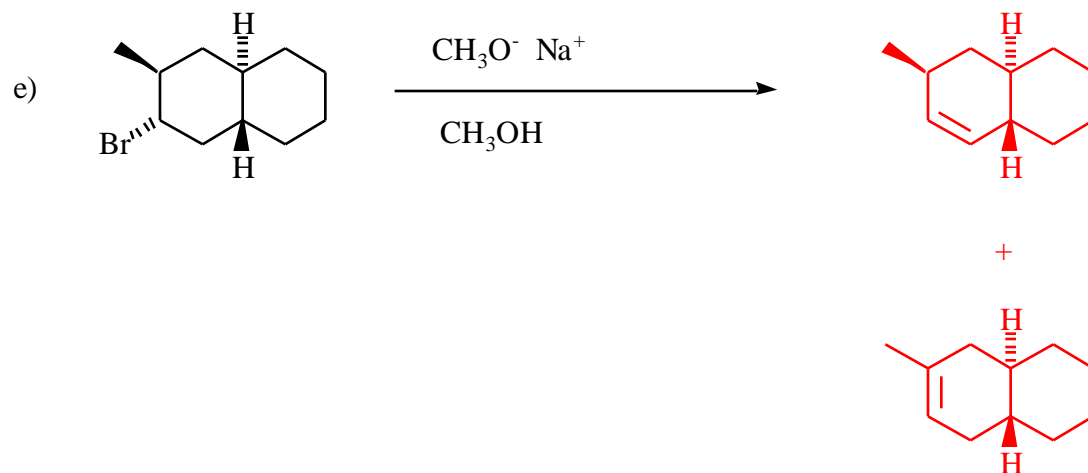
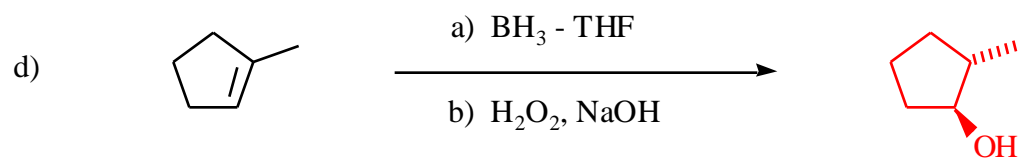
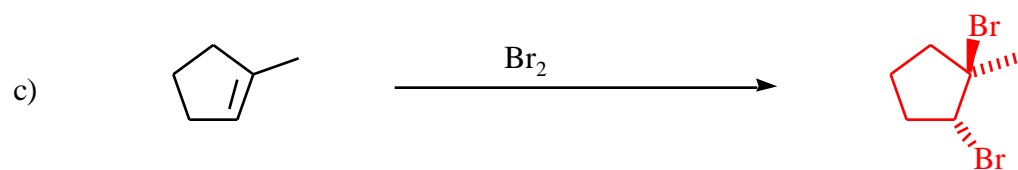
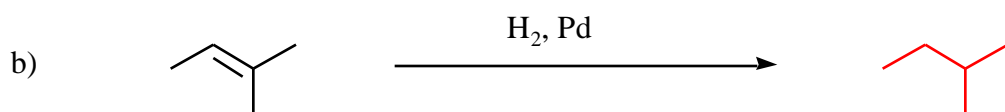
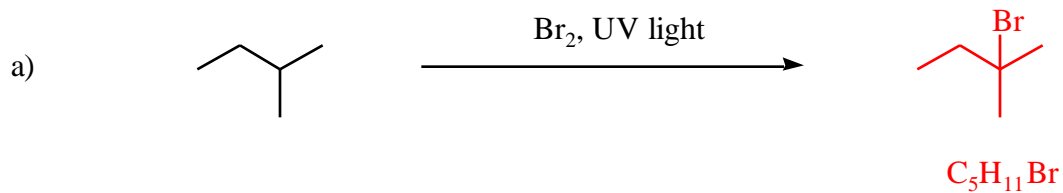
Z



E

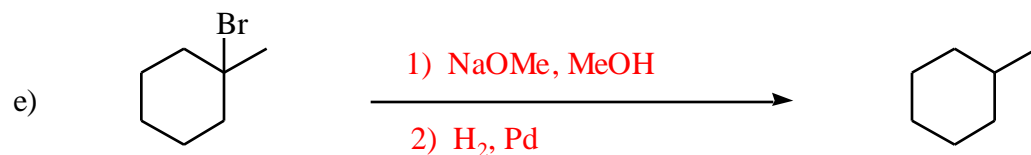
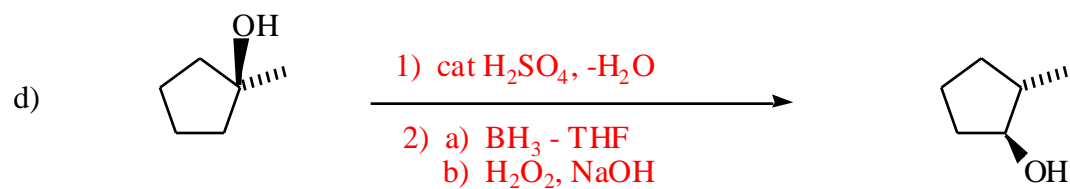
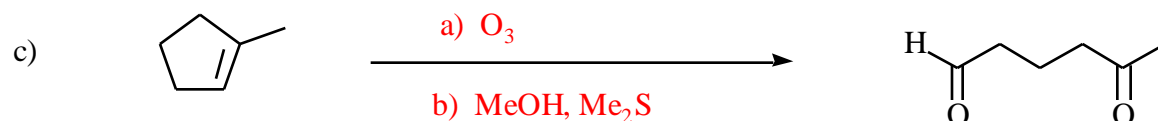
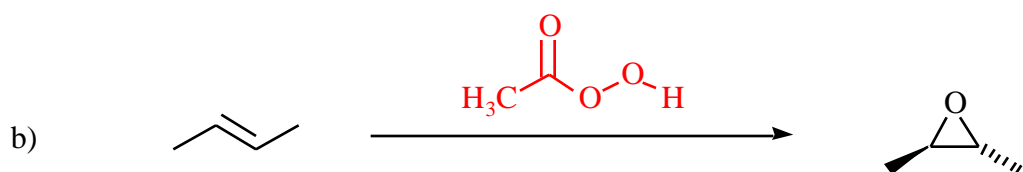
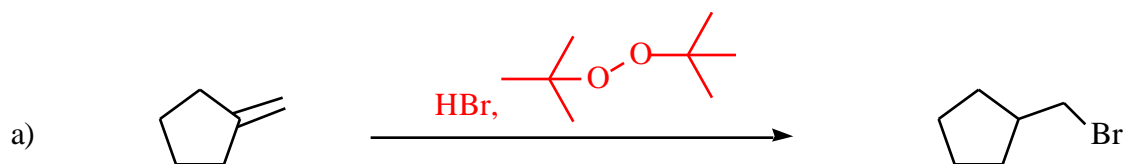
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2) (25 pts) Give the single major product of each of the following reactions. Show the stereochemistry of the product using wedges and dashes if appropriate.



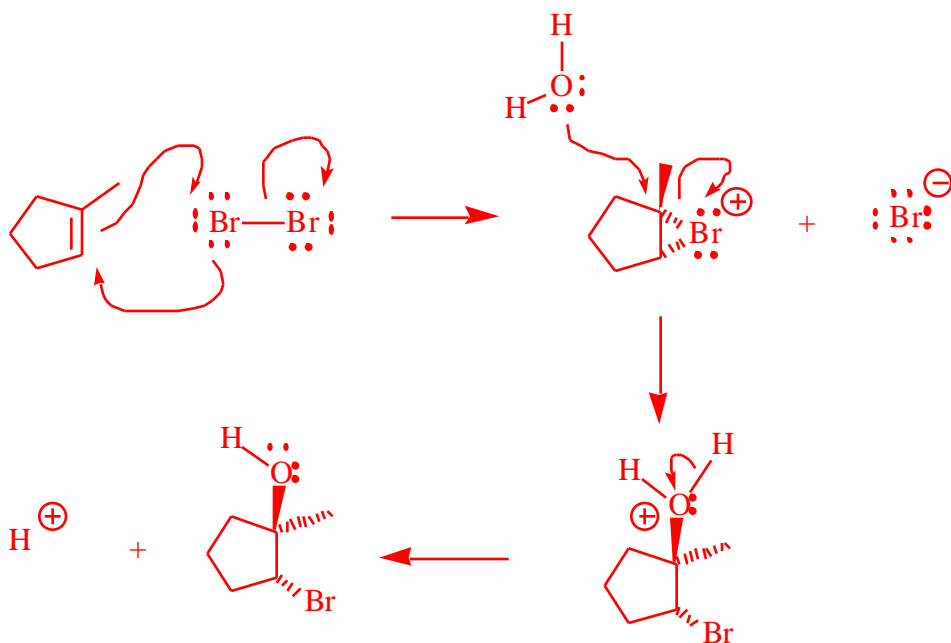
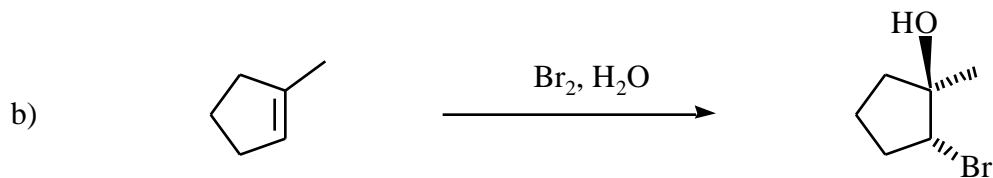
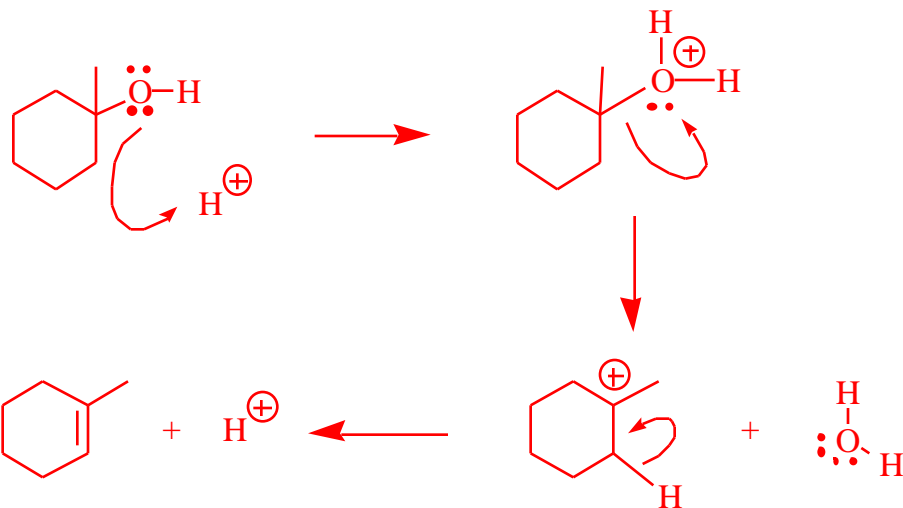
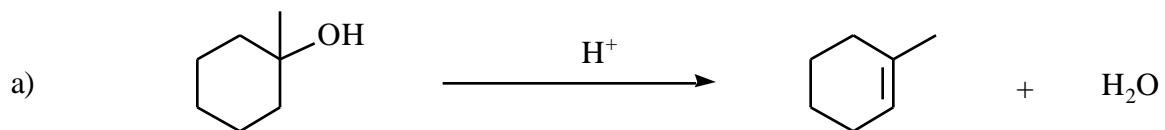
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3) (25 pts) Propose reagents for accomplishing the following transformations. NOTE: more than one step may be required! Try to make your synthesis efficient (i.e. the desired product should be the major product). You must use the starting material given, and you may use any other organic or inorganic reagents you need.



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4) (30 pts) a) Propose arrow-pushing mechanisms for each of the following transformations. Carefully show every intermediate in your mechanisms, with all lone pairs and formal charges.



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4 –continued-

