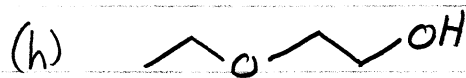
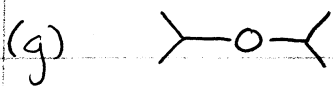
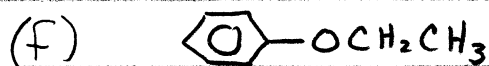
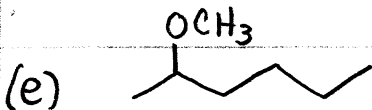
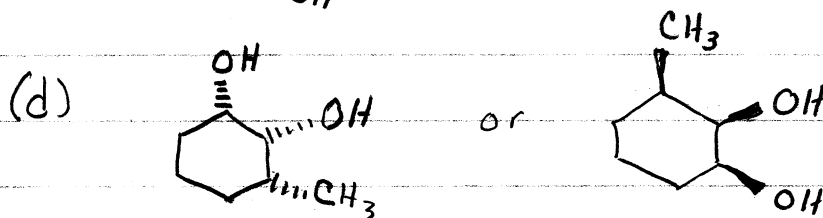
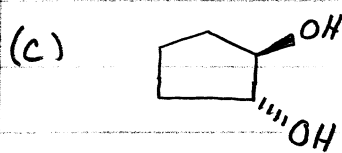
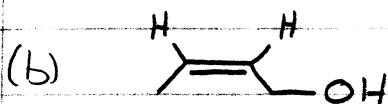


Chem 2114 Unit 6 Solutions

1. (a) 4-bromo-3,6-dimethyl-3-heptanol
- (b) trans-5-methyl-2-hexen-1-ol
- (c) 4-ethyl-2,3-hexanediol
- (d) meta-nitrophenol
- (e) resorcinol or 1,3-benzenediol
- (f) ortho-cresol
- (g) tetrahydrofuran
- (h) t-butyl phenyl ether
- (i) chloromethyl methyl ether
- (j) 3-ethoxyheptane



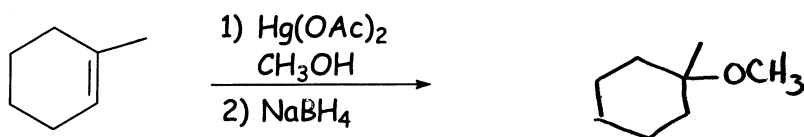
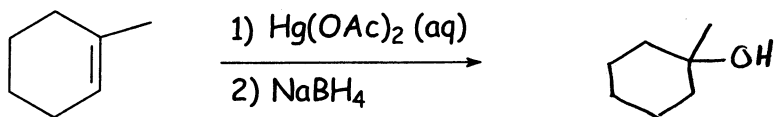
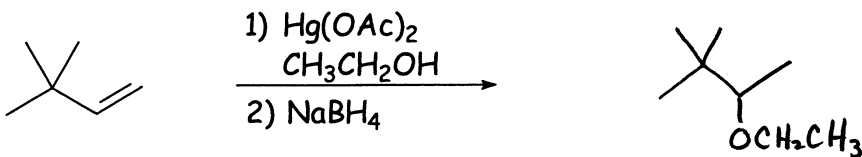
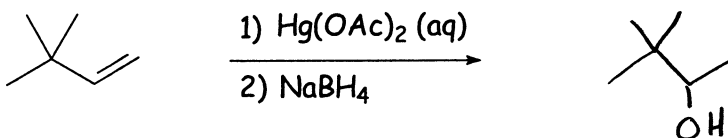
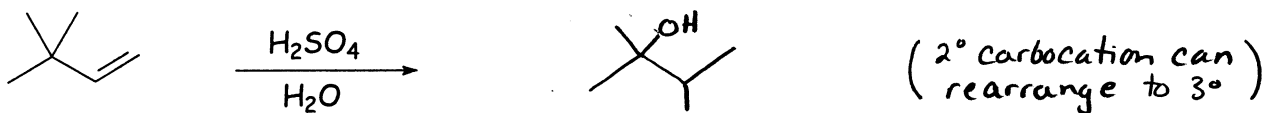
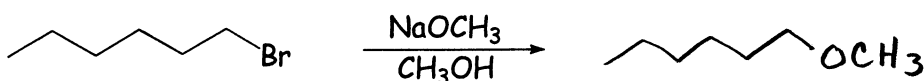
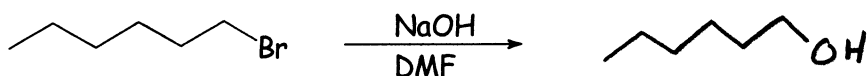
3. Higher BP?

- (a) 2-hexanol or methanol  
 (b) acetylene or methanol  
 c. diethyl ether or 1-butanol  
 d. 2-propanol or acetone

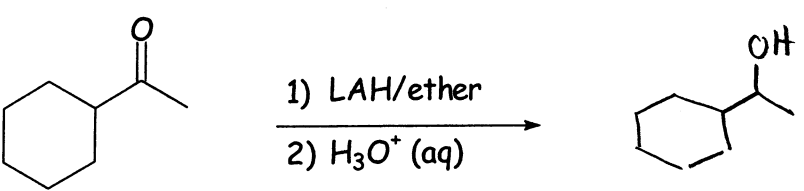
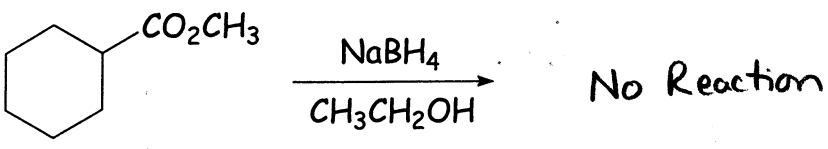
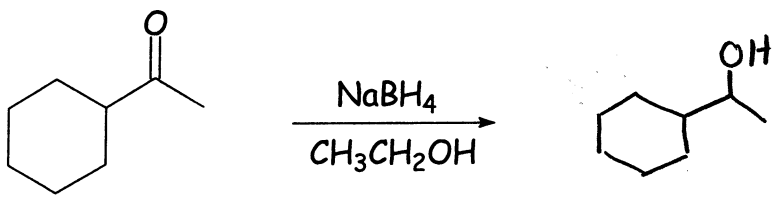
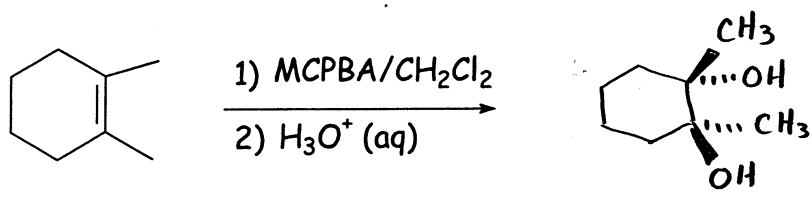
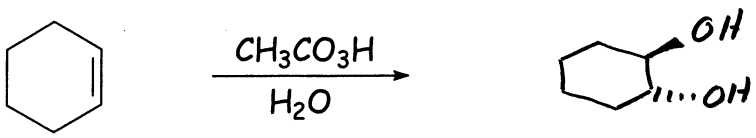
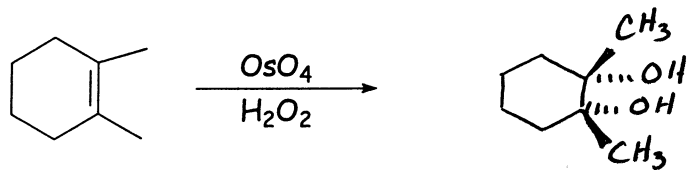
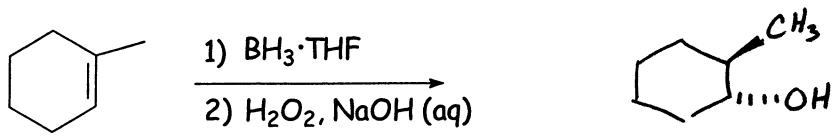
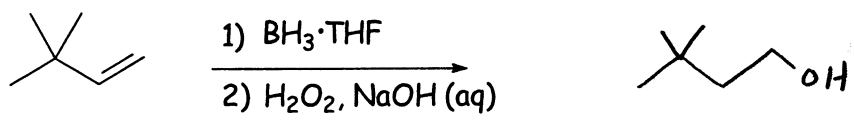
4. Which is more soluble in water?

- a. 2-hexanol or methanol  
 b. 1-propanol or acetylene  
 c. 1-butanol or diethyl ether  
 d. propane or ethanol

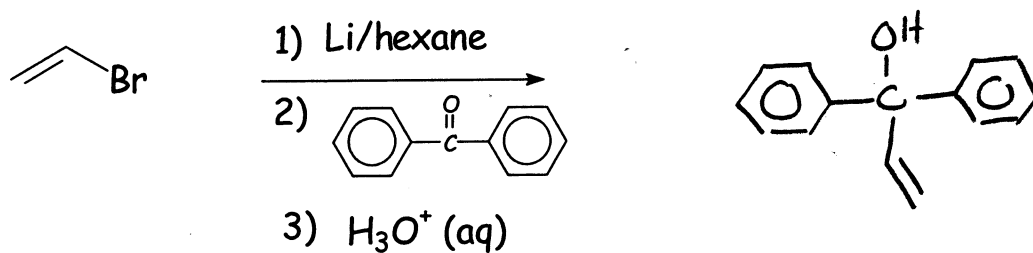
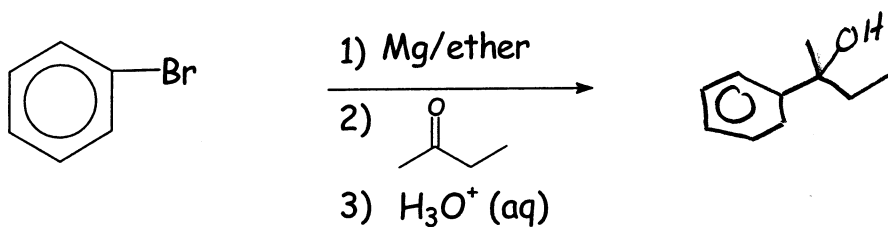
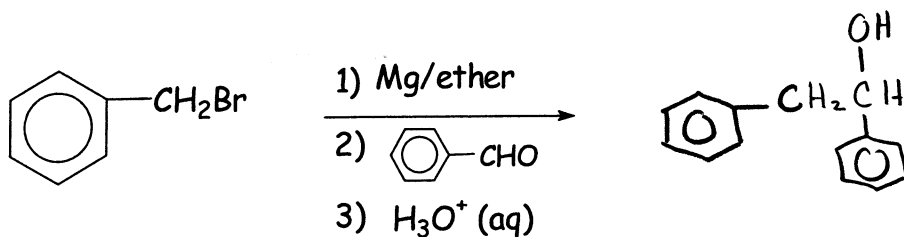
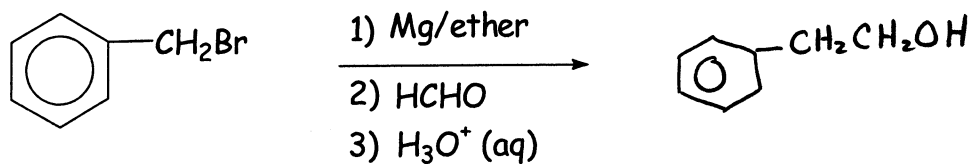
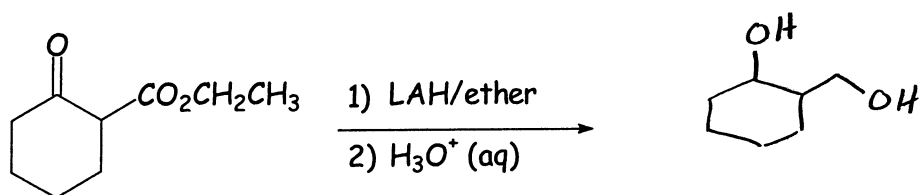
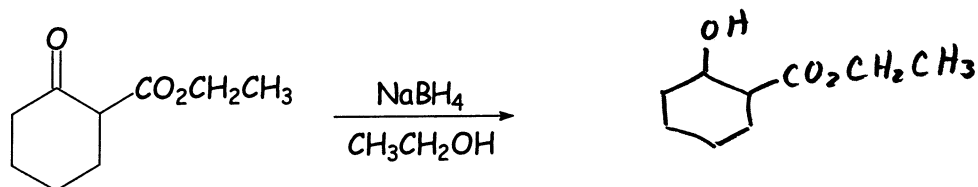
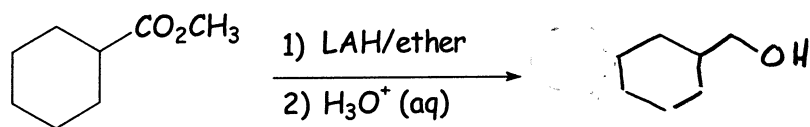
5. Predict the major product.



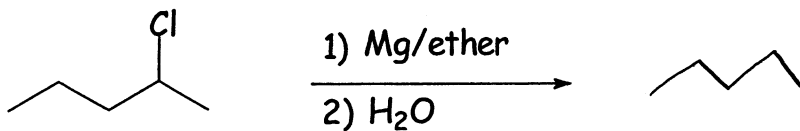
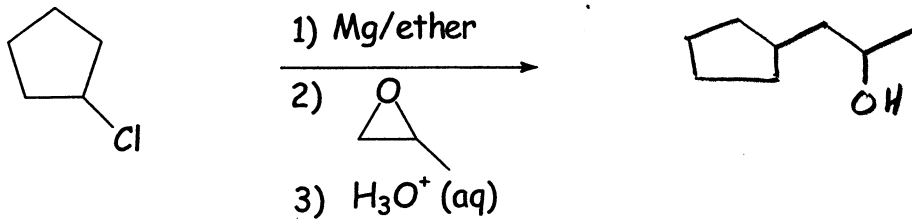
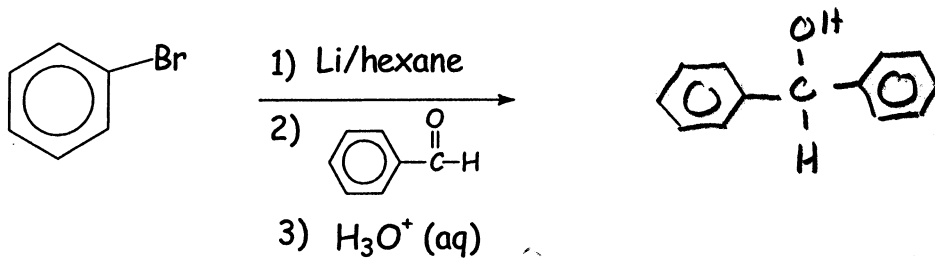
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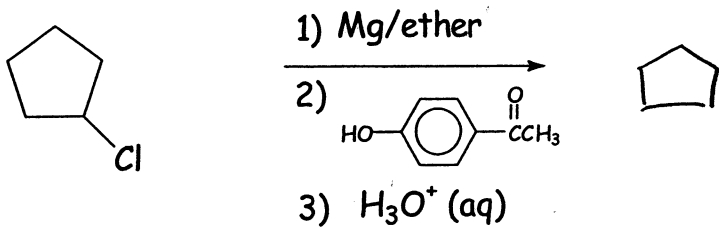
5(cont)



5 (cont)

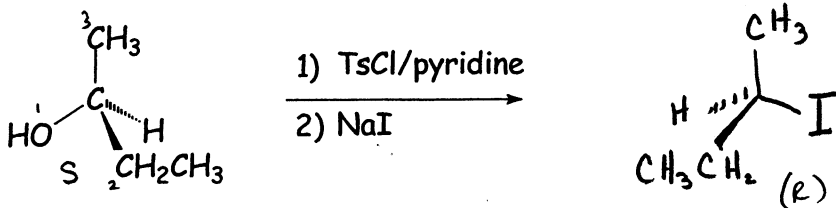
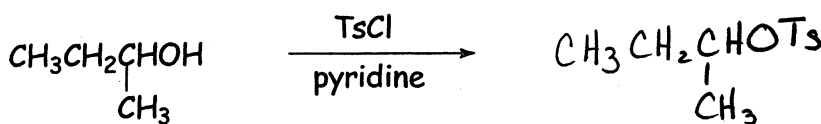


$H_2O$  destroys the Grignard reagent in an acid-base reaction

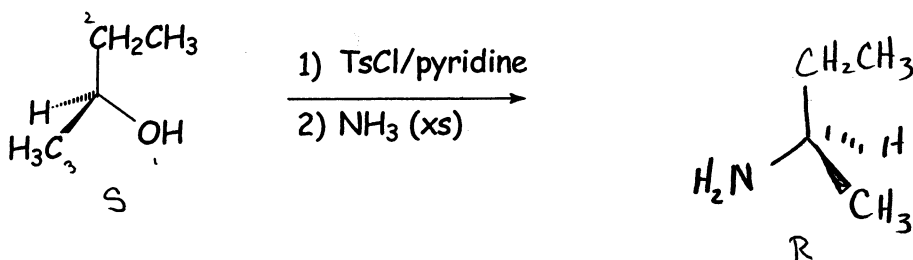


the phenol will protonate the Grignard in an acid-base reaction.

6. Predict the major product.



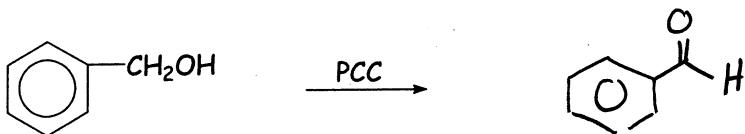
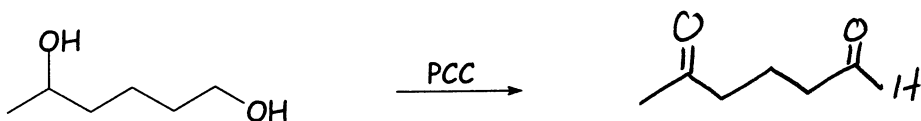
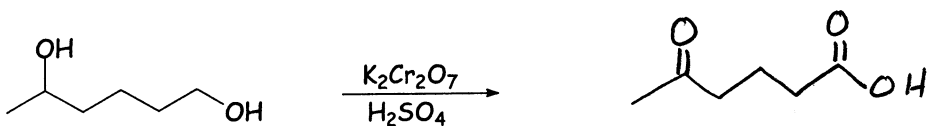
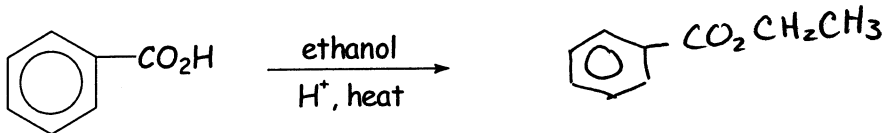
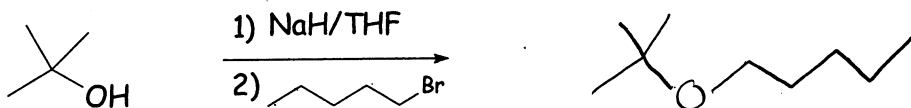
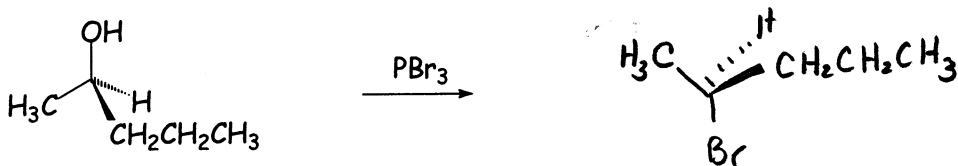
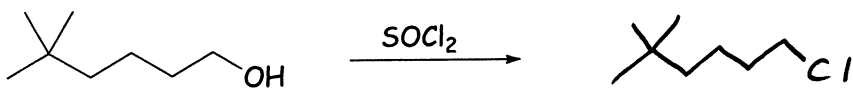
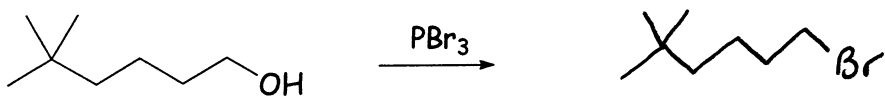
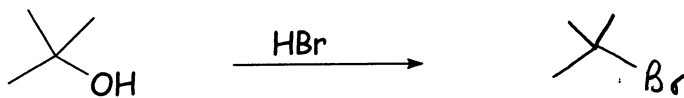
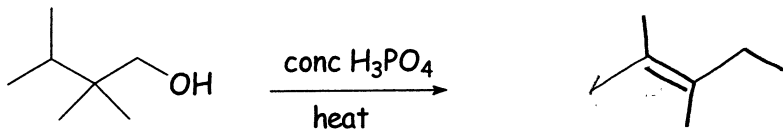
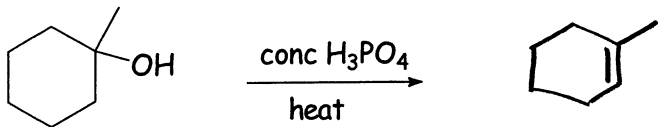
inversion



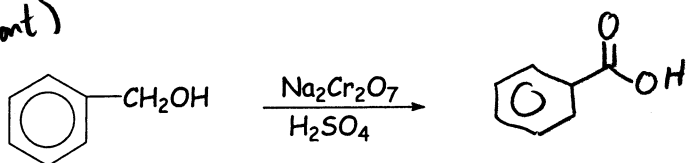
inversion

excess  $NH_3$  gives the free amine, not the ammonium salt.

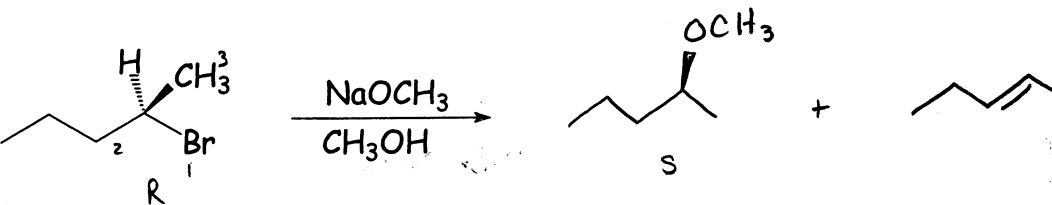
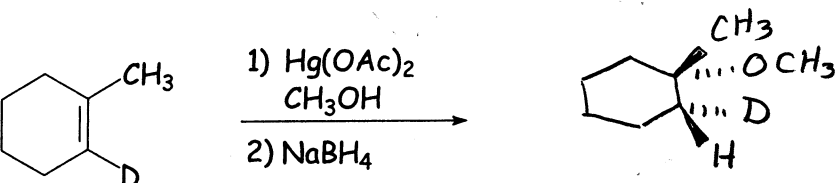
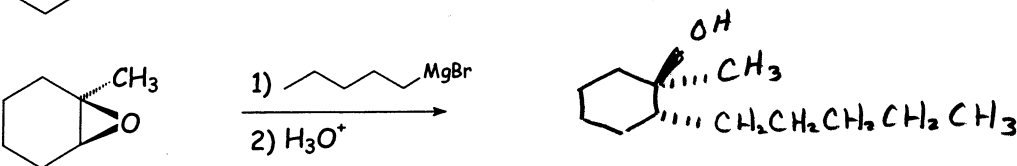
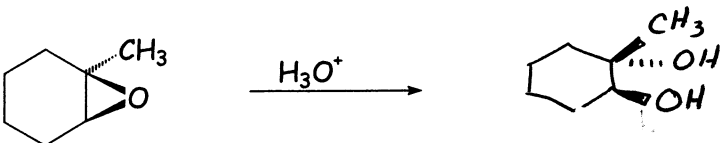
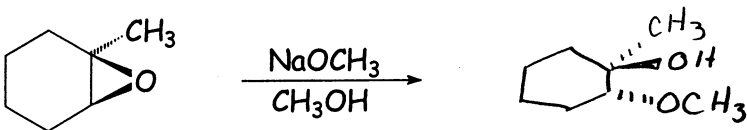
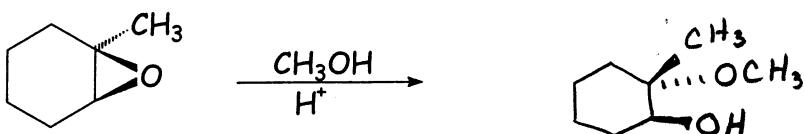
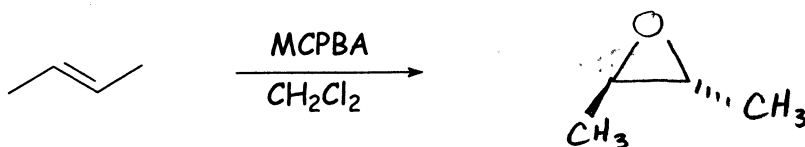
6 (cont)



6 (cont)

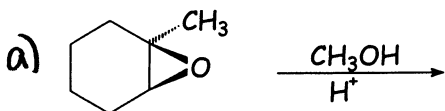


7. Predict the major product.

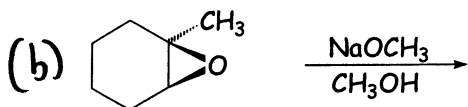


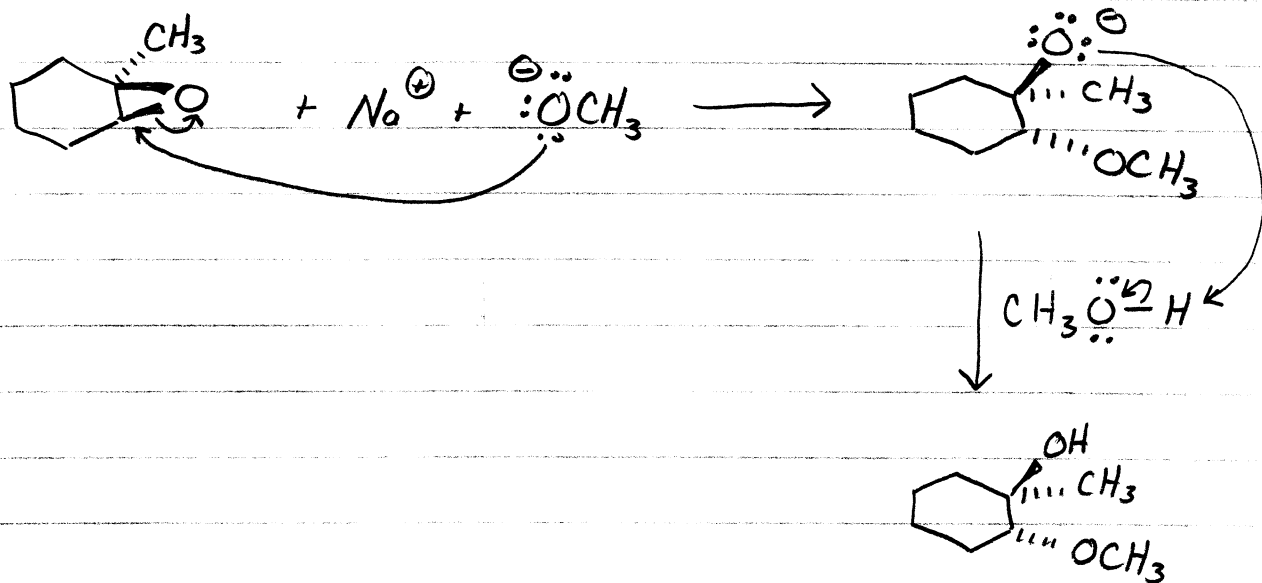
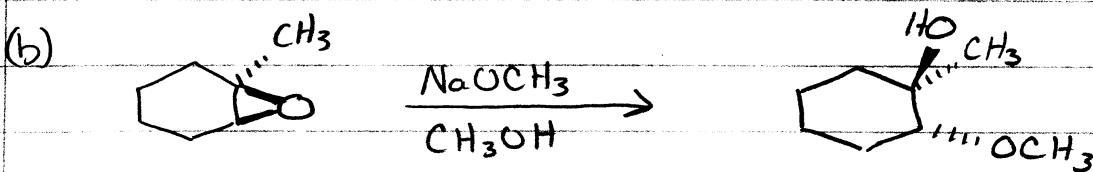
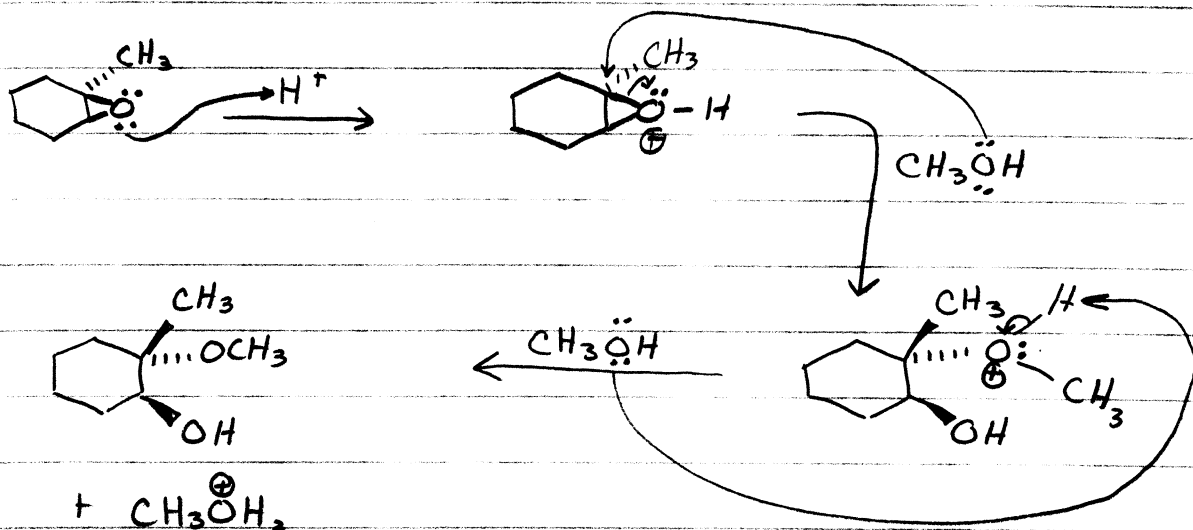
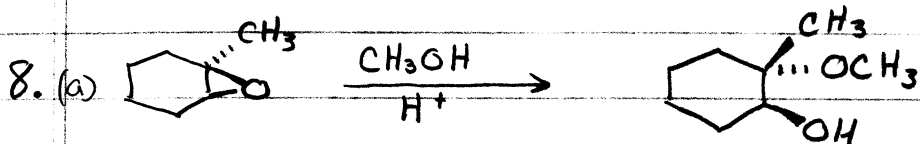
$S_N2 + E2$  -  
ratio depends on  
Temperature

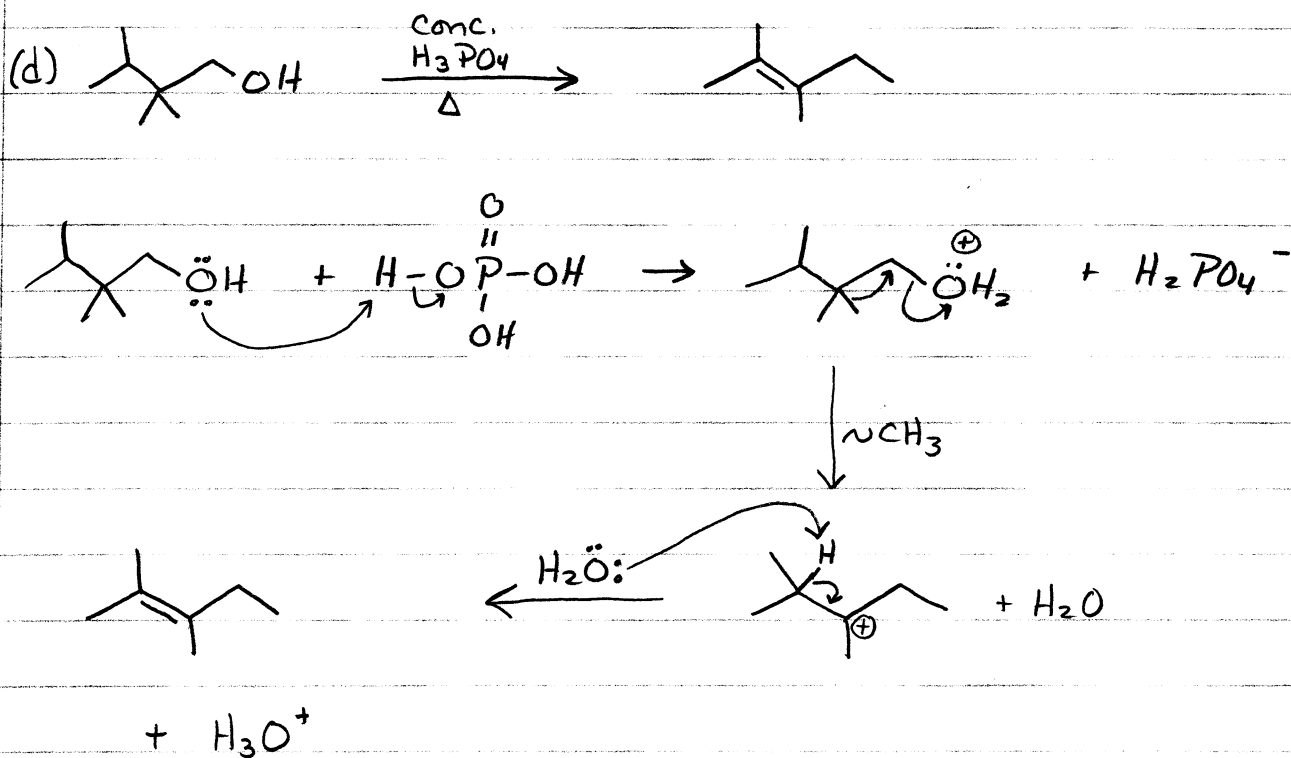
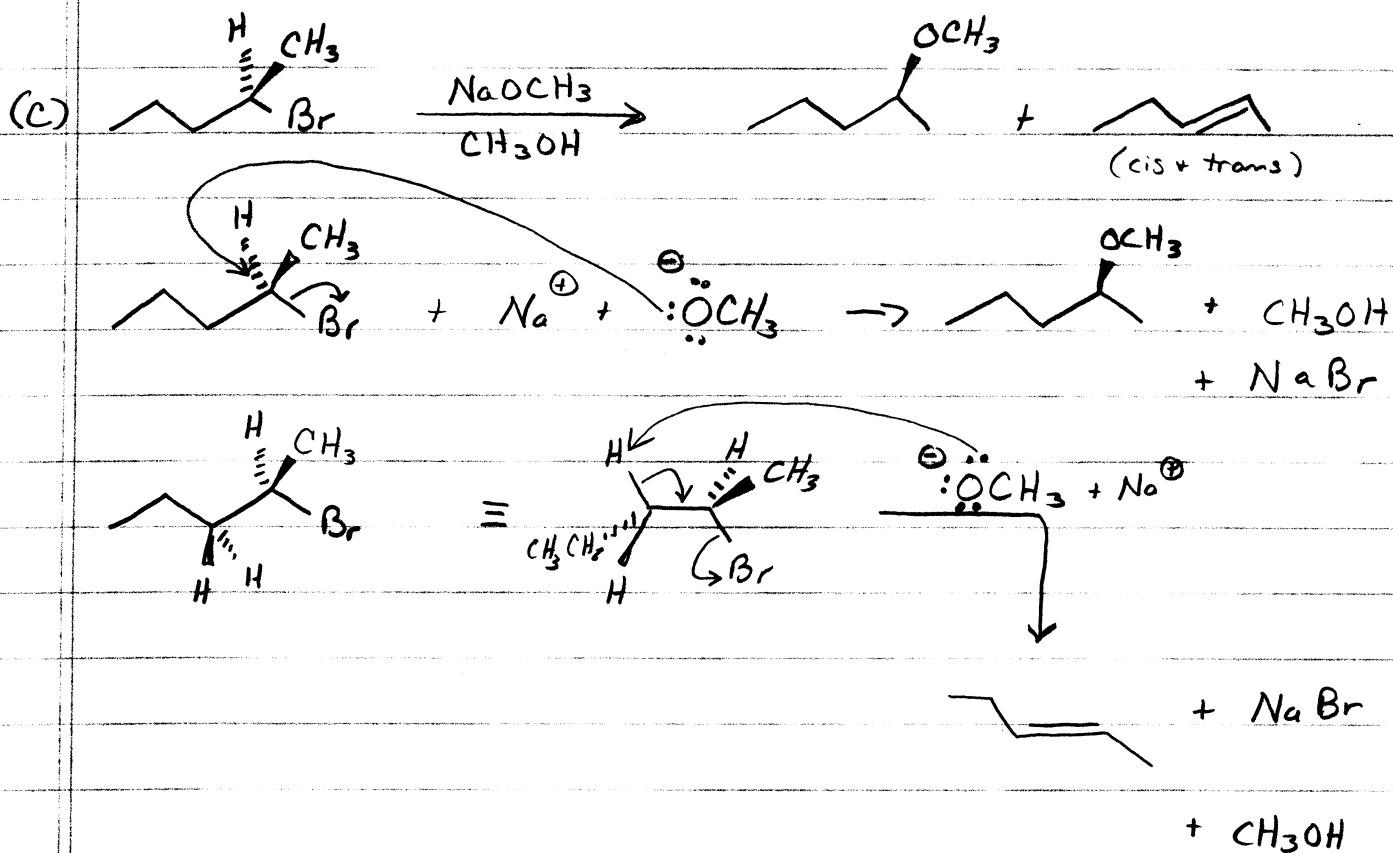
8. Write the mechanism for the following reactions:

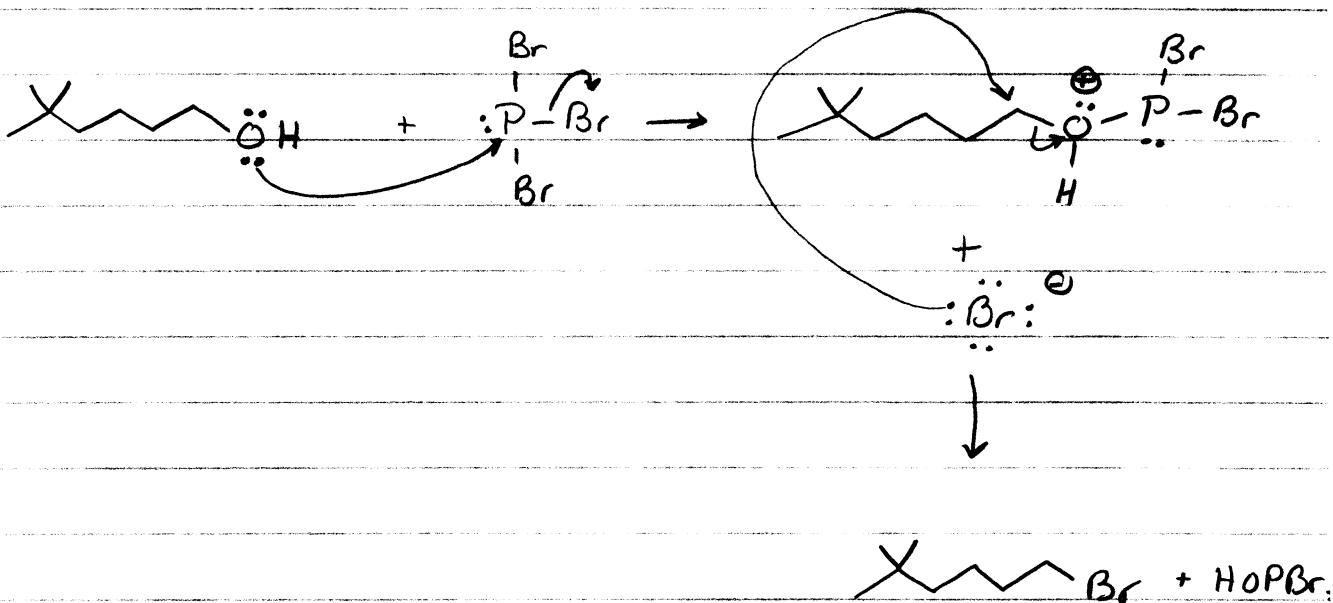
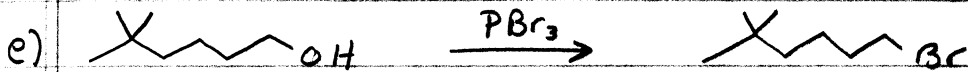


attached - next page

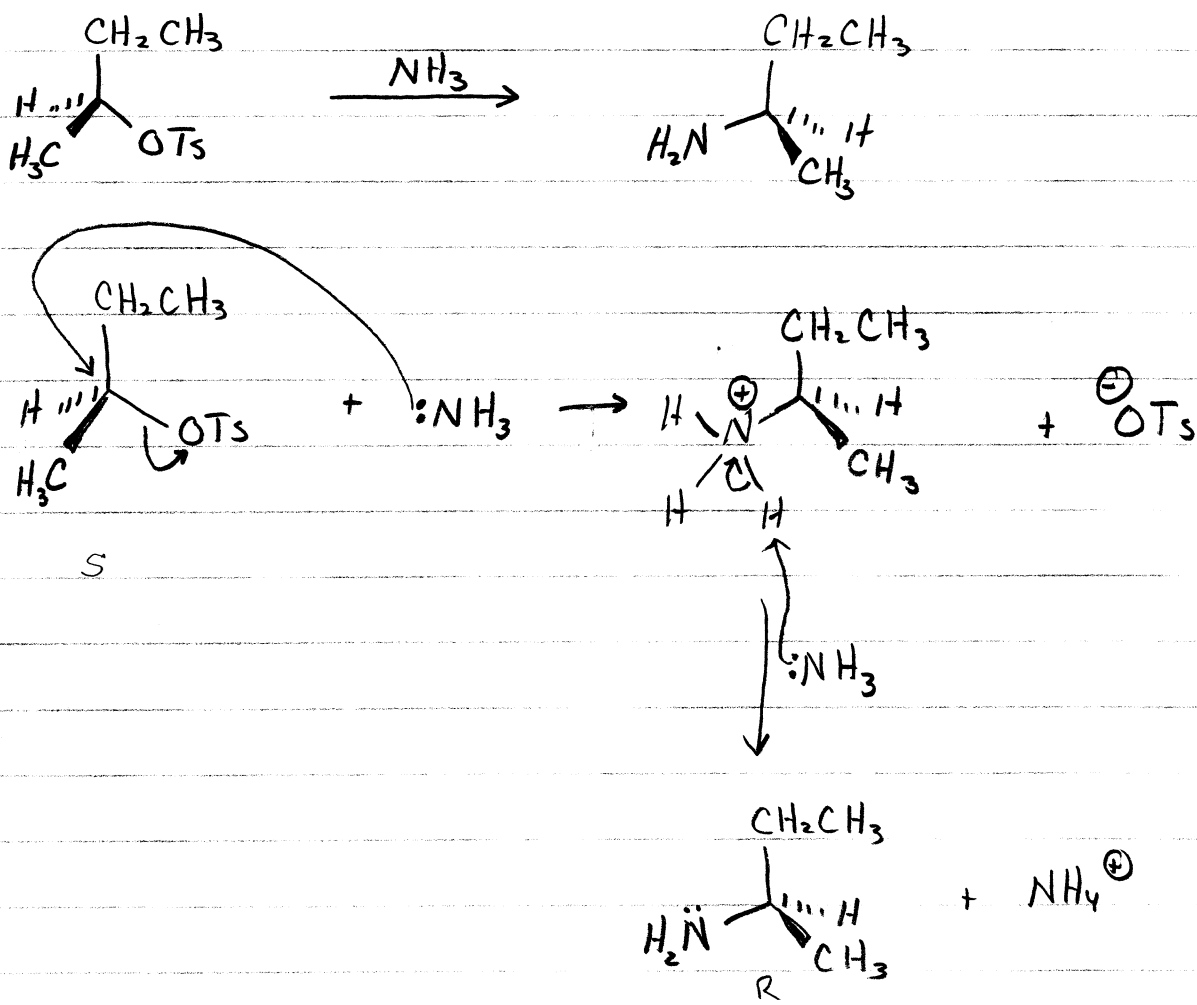


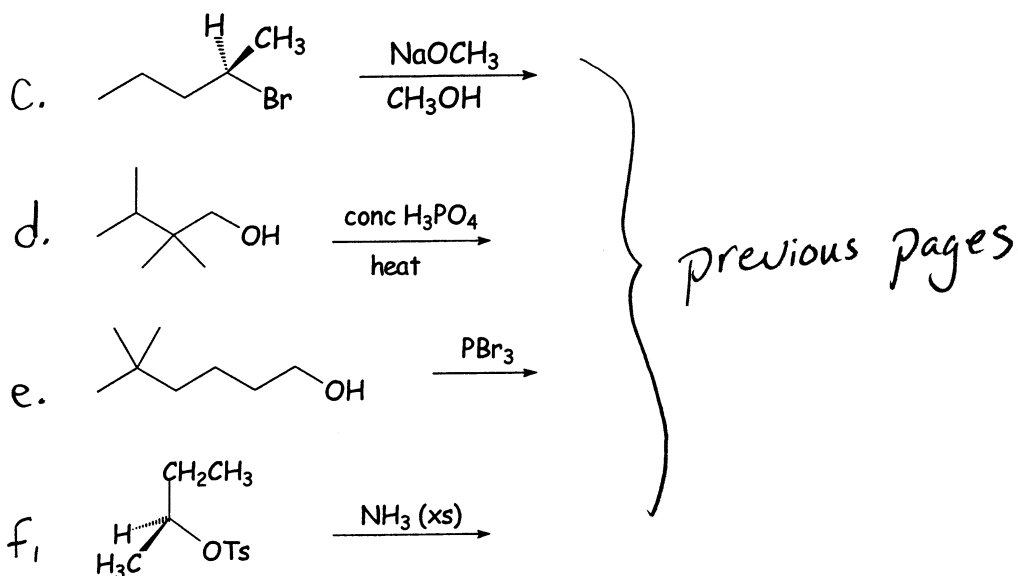




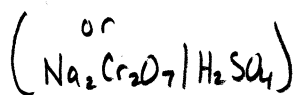
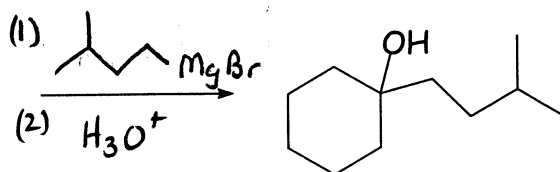
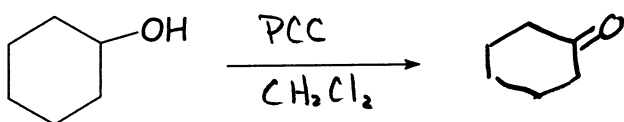
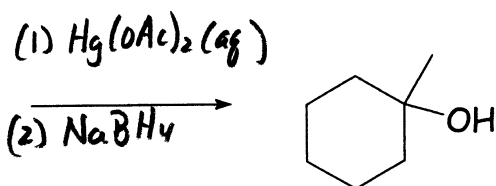
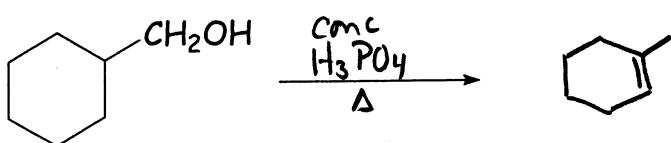
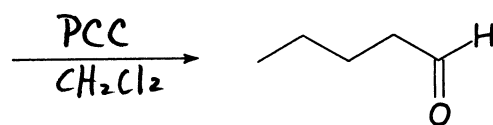
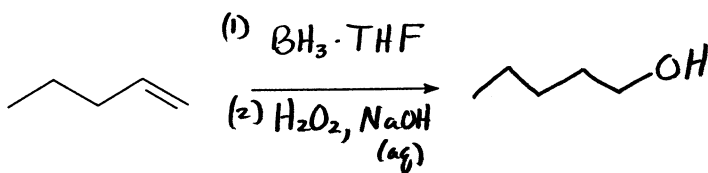
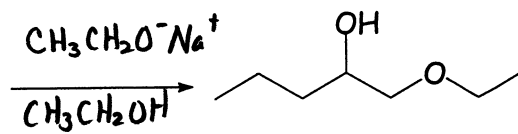
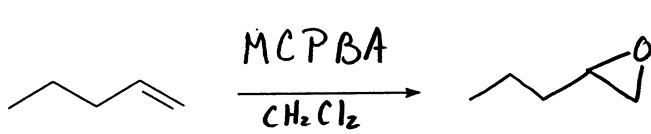


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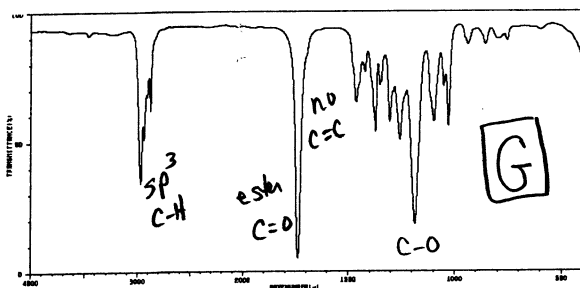
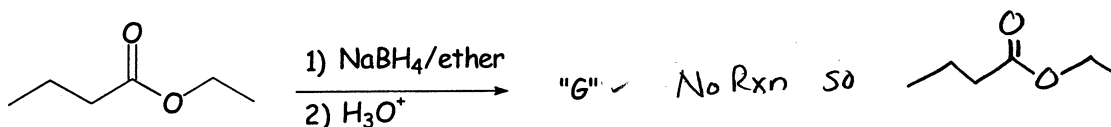
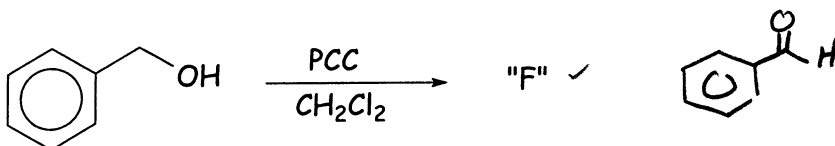
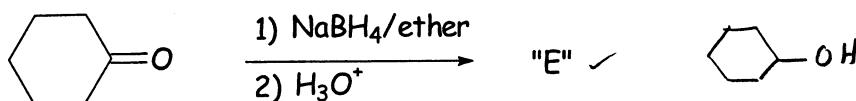
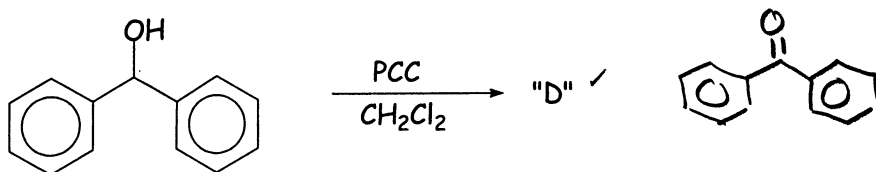
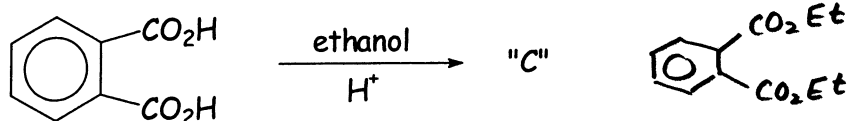
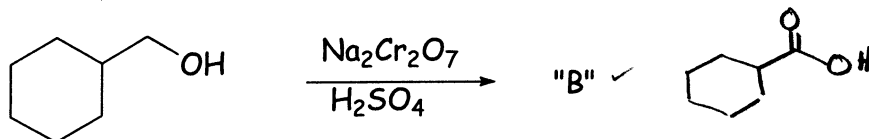
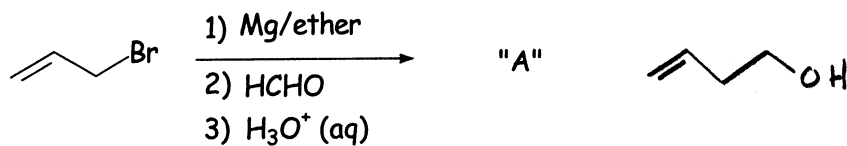




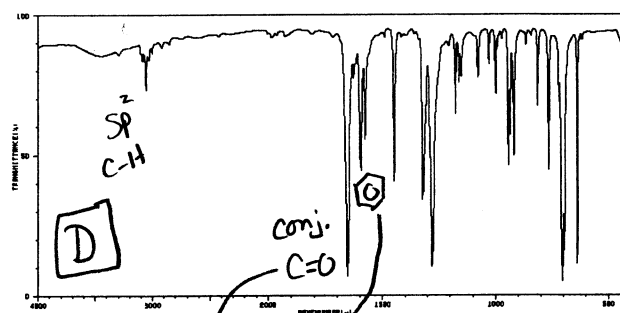
9. Show how to synthesize the following products.



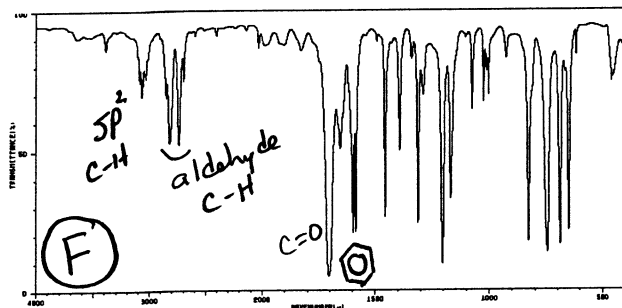
10. Match the products of each of the following reactions to the correct IR spectrum.



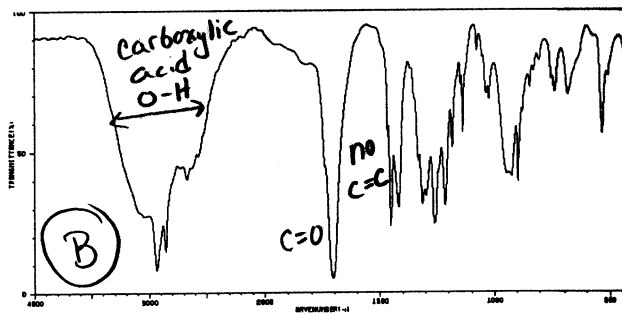
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2939	49	1352	68	1029	53		
2879	80	1347	70	935	84		
1739	4	1306	55	853	84		
1463	62	1257	49	801	86		
1450	88	1188	17	796	86		
1422	74	1096	55	791	86		



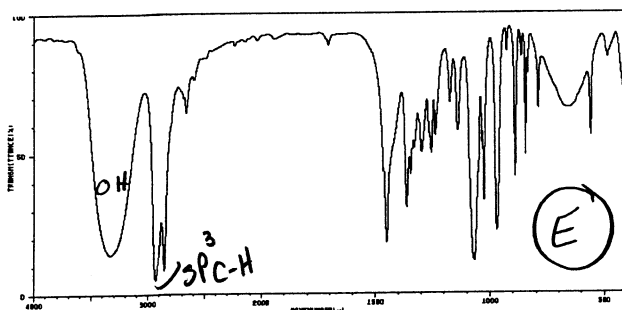
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3057	70	1677	55	1151	74	919	47	639	10
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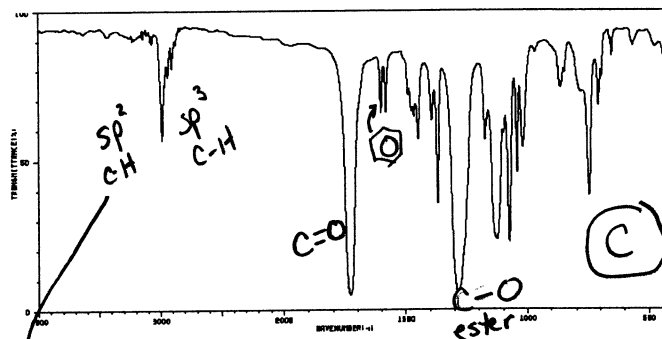
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2850	66	1901	84	1391	47	1023	64	667	74
2820	50	1828	81	1339	79	1008	74	650	20
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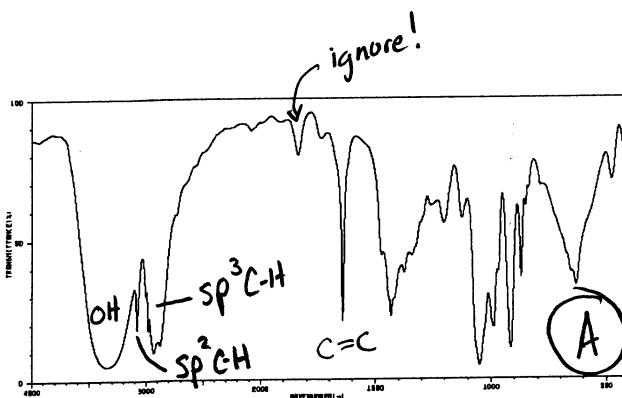
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1704	4	1262	29	1034	68	874	62	532	63
1466	53	1256	23	1021	66	841	70	510	74
1453	23	1214	29	943	39	824	74		
1418	28	1183	49	936	41	797	78		



3331	13	1704	86	1266	47	970	21	667	64
2932	4	1467	42	1238	53	926	84	557	53
2855	8	1452	17	1174	86	890	39	482	61
2886	68	1363	29	1140	65	863	81		
2666	62	1346	41	1068	11	845	47		
2568	74	1329	50	1034	52	835	74		
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3072	86	1600	64	1367	34	1018	62	661	81
2984	55	1580	64	1286	5	964	84	564	84
2963	72	1488	68	1174	55	864	72	470	64
2942	74	1476	64	1126	22	847	77		
2906	77	1465	62	1096	57	745	37		
2873	86	1447	55	1074	21	706	66		
1727	4	1391	60	1041	44	692	74		



3080	18	1736	81	1126	56	632	39
3002	29	1642	20	1050	4	474	68
2981	17	1433	22	996	19		
2939	10	1376	37	988	18		
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