

First Letter of Last Name

Write your name above this line

2283g Quiz 1  
 Dr. Brian Pagenkopf  
 February 28, 2011

Please stay in your seats and don't leave until 9:45, 10:00 or 10:15 No notes, books, calculators, cell phones, iPods, computers or electronics of any sort allowed. Please turn off the ringer on your phone now.

Be sure you have all of the exam pages.

**PERIODIC TABLE OF THE ELEMENTS**

Atomic masses are based on  $^{12}\text{C}$ . Atomic masses in parentheses are for the most stable isotope.

6 <b>C</b> 12.011		Atomic number Symbol Atomic mass																	
Groups	1A																	VIIIA	
Periods	1 <b>H</b> 1.00079																	2 <b>He</b> 4.00260	
	3 <b>Li</b> 6.941	4 <b>Be</b> 9.01218																	10 <b>Ne</b> 20.179
	11 <b>Na</b> 22.98977	12 <b>Mg</b> 24.305	IIIB	IVB	VB	VIB	VII B	VIIIB		IB	IIB	13 <b>Al</b> 26.98154	14 <b>Si</b> 28.0855	15 <b>P</b> 30.97376	16 <b>S</b> 32.06	17 <b>Cl</b> 35.453	18 <b>Ar</b> 39.948		
	19 <b>K</b> 39.0963	20 <b>Ca</b> 40.08	21 <b>Sc</b> 44.9559	22 <b>Ti</b> 47.90	23 <b>V</b> 50.9415	24 <b>Cr</b> 51.996	25 <b>Mn</b> 54.9380	26 <b>Fe</b> 55.847	27 <b>Co</b> 58.9332	28 <b>Ni</b> 58.70	29 <b>Cu</b> 63.546	30 <b>Zn</b> 65.38	31 <b>Ga</b> 69.72	32 <b>Ge</b> 72.59	33 <b>As</b> 74.9216	34 <b>Se</b> 78.96	35 <b>Br</b> 79.904	36 <b>Kr</b> 83.80	
	37 <b>Rb</b> 85.4678	38 <b>Sr</b> 87.62	39 <b>Y</b> 88.9059	40 <b>Zr</b> 91.22	41 <b>Nb</b> 92.9064	42 <b>Mo</b> 95.94	43 <b>Tc</b> (98)	44 <b>Ru</b> 101.07	45 <b>Rh</b> 102.9055	46 <b>Pd</b> 106.4	47 <b>Ag</b> 107.868	48 <b>Cd</b> 112.41	49 <b>In</b> 114.82	50 <b>Sn</b> 118.69	51 <b>Sb</b> 121.75	52 <b>Te</b> 127.60	53 <b>I</b> 126.9045	54 <b>Xe</b> 131.30	
	55 <b>Cs</b> 132.9054	56 <b>Ba</b> 137.33	57 <b>La</b> 138.9055	72 <b>Hf</b> 178.49	73 <b>Ta</b> 180.9479	74 <b>W</b> 183.85	75 <b>Re</b> 186.207	76 <b>Os</b> 190.2	77 <b>Ir</b> 192.22	78 <b>Pt</b> 195.09	79 <b>Au</b> 196.9665	80 <b>Hg</b> 200.59	81 <b>Tl</b> 204.37	82 <b>Pb</b> 207.2	83 <b>Bi</b> 208.9804	84 <b>Po</b> (209)	85 <b>At</b> (210)	86 <b>Rn</b> (222)	
	87 <b>Fr</b> (223)	88 <b>Ra</b> 226.0254	89 <b>Ac</b> 227.0278	† 104 <b>Unq</b> (261)	105 <b>Unp</b> (262)	106 <b>Unh</b> (263)													

\*Lanthanide series

58 <b>Ce</b> 140.12	59 <b>Pr</b> 140.9077	60 <b>Nd</b> 144.24	61 <b>Pm</b> (145)	62 <b>Sm</b> 150.4	63 <b>Eu</b> 151.96	64 <b>Gd</b> 157.25	65 <b>Tb</b> 158.9254	66 <b>Dy</b> 162.50	67 <b>Ho</b> 164.9304	68 <b>Er</b> 167.26	69 <b>Tm</b> 168.9342	70 <b>Yb</b> 173.04	71 <b>Lu</b> 174.967
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† Actinide series

90 <b>Th</b> 232.0381	91 <b>Pa</b> 231.0359	92 <b>U</b> 238.029	93 <b>Np</b> 237.0482	94 <b>Pu</b> (244)	95 <b>Am</b> (243)	96 <b>Cm</b> (247)	97 <b>Bk</b> (247)	98 <b>Cf</b> (251)	99 <b>Es</b> (252)	100 <b>Fm</b> (257)	101 <b>Md</b> (258)	102 <b>No</b> (259)	103 <b>Lr</b> (260)
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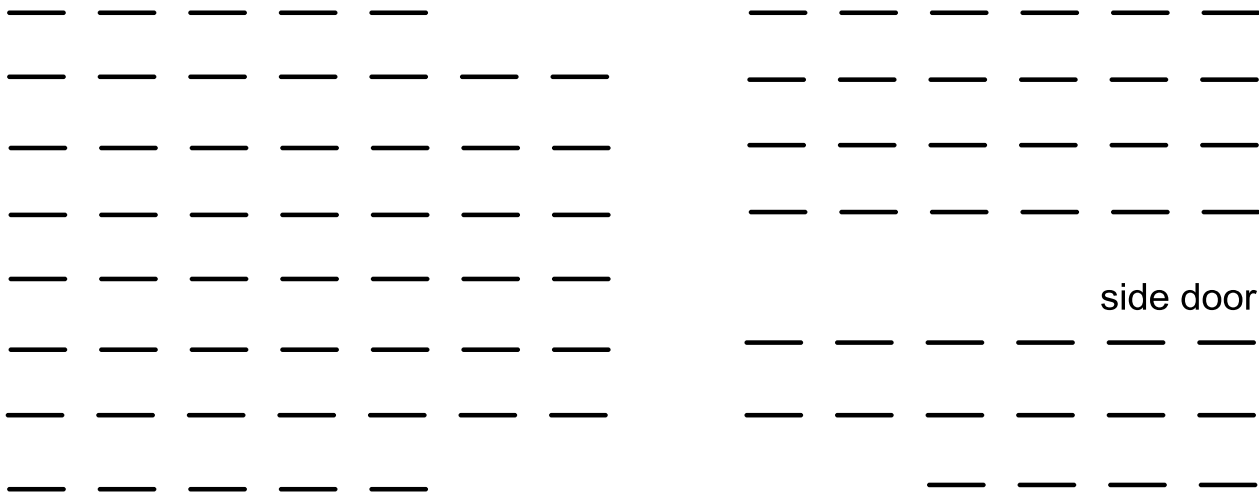
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3	20	
4	16	
5	16	
6	16	
7	16	
8	16	
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ID number

Place an X where you are sitting.

front of room.



Draw a specific structure (no generic R groups) that has a pKa close to the number given.

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20

5

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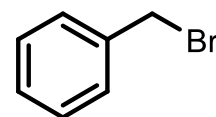
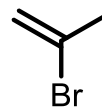
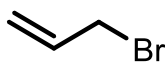
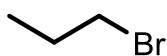
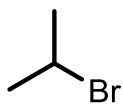
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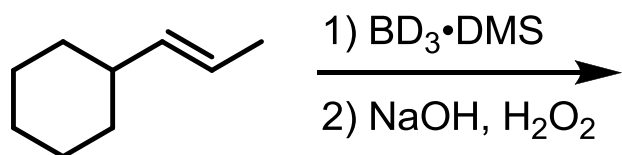
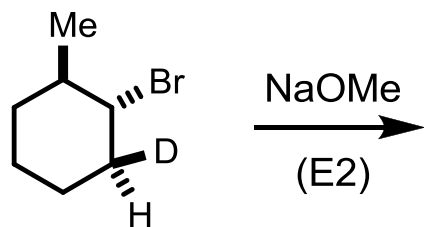
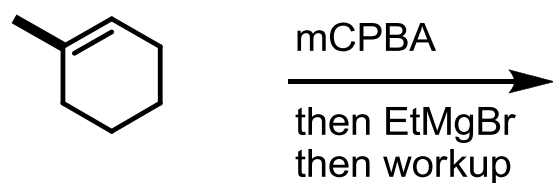
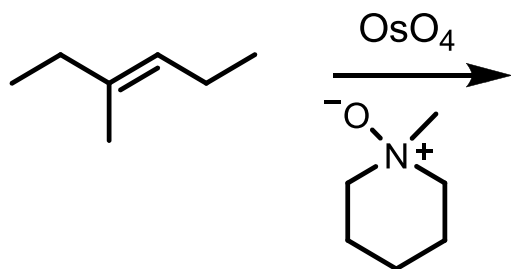
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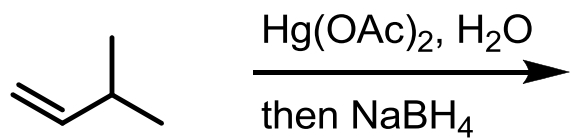
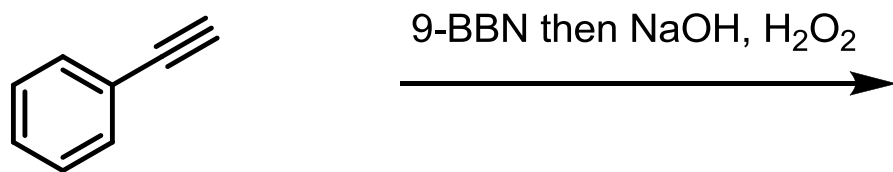
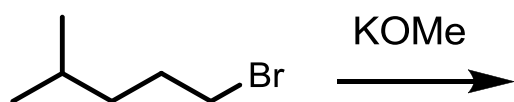
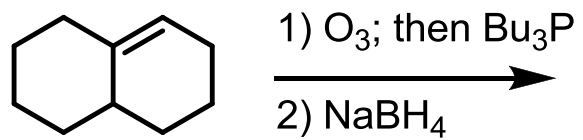
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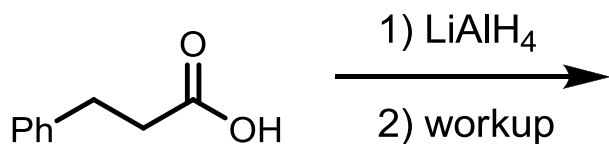
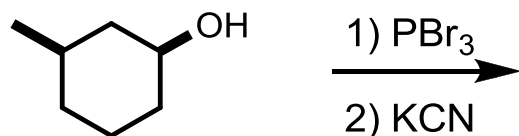
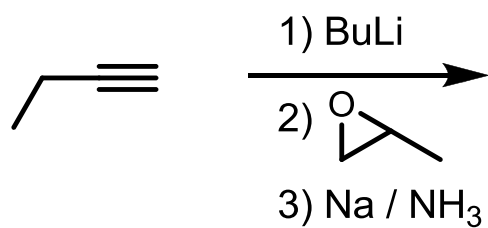
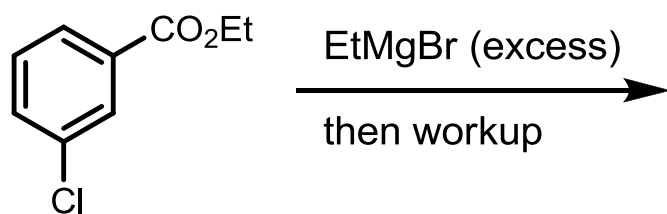
Rank the following from most reactive toward substitution under usual SN2 conditions with a #1, to the least reactive with a 6.



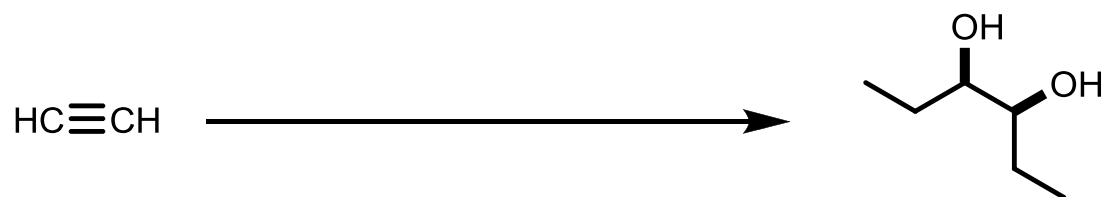
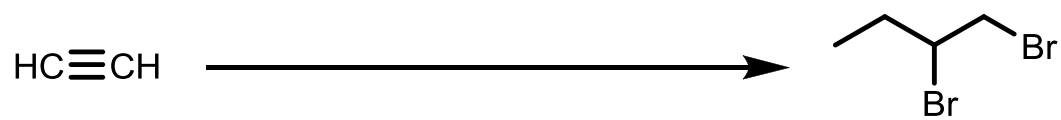
Show products for the following reactions. For some questions stereochemistry is a critical part of the answer for full marks.



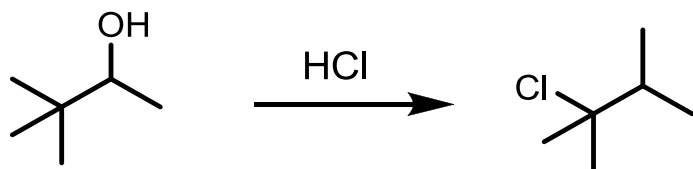




Provide reagents to effect the following transformations. More than one step may be required.



Provide a plausible mechanism for the following transformation.



Predict the product and provide a plausible mechanism.

