







5. (pts) Identify, by placing the Roman numeral in the blank provided, if the following pairs of compounds are:

I. identical compounds

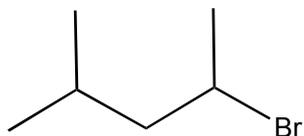
II. resonance structures

III. constitutional isomers

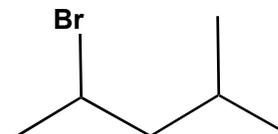
IV. different compounds with different compositions

V. different conformations of the same compound

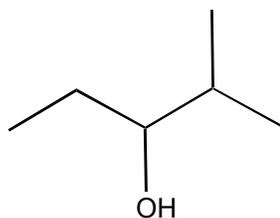
(a) \_\_\_\_\_



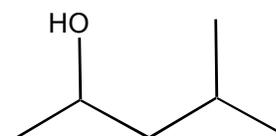
and



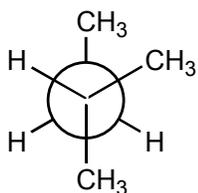
(b) \_\_\_\_\_



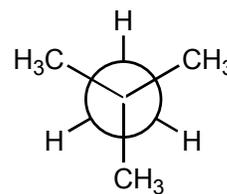
and



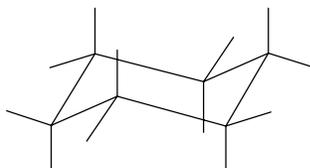
(c) \_\_\_\_\_



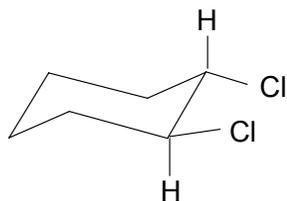
and



6. (pts) Draw the most stable conformation of cis-1-tert-butyl-3-methylcyclohexane. All you need to do is add the substituents to the skeleton below.

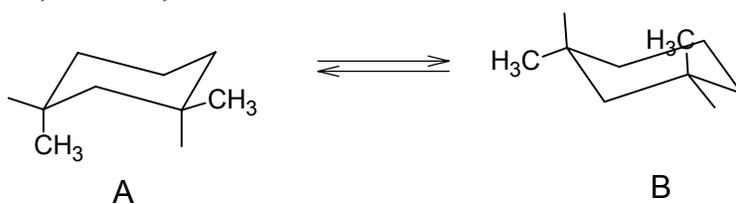


7. (pts) What is the spatial relationship of the two chlorine atoms in the following structure? Circle your answer.



gauche      anti      eclipsed      skewed

8. (pts) Circle the statement that is correct concerning the relative stabilities of the two conformations, A and B, shown below.



A is more stable

B is more stable

A and B are equal in stabilities

# Periodic Table

1 H																	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
19 K	20 Ca	21 Sc	22 Ti	23 V	24 Cr	25 Mn	26 Fe	27 Co	28 Ni	29 Cu	30 Zn	31 Ga	32 Ge	33 As	34 Se	35 Br	36 Kr
37 Rb	38 Sr	39 Y	40 Zr	41 Nb	42 Mo	43 Tc	44 Ru	45 Rh	46 Pd	47 Ag	48 Cd	49 In	50 Sn	51 Sb	52 Te	53 I	54 Xe
55 Cs	56 Ba	57 La	72 Hf	73 Ta	74 W	75 Re	76 Os	77 Ir	78 Pt	79 Au	80 Hg	81 Tl	82 Pb	83 Bi	84 Po	85 At	86 Rn
87 Fr	88 Ra	89 Ac	104 Rf	105 Ha	106 Sg	107 Ns	108 Hs	109 Mt	110	111	112	(113)	(114)	(115)	(116)	(117)	(118)
(119)	(120)	(121)	(154)	(155)	(156)	(157)	(158)	(159)	(160)	(161)	(162)	(163)	(164)	(165)	(166)	(167)	(168)

**LANTHANIDES**

58 Ce	59 Pr	60 Nd	61 Pm	62 Sm	63 Eu	64 Gd	65 Tb	66 Dy	67 Ho	68 Er	69 Tm	70 Yb	71 Lu
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**ACTINIDES**

90 Th	91 Pa	92 U	93 Np	94 Pu	95 Am	96 Cm	97 Bk	98 Cf	99 Es	100 Fm	101 Md	102 No	103 Lr
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**SUPER-  
ACTINIDES**

(122)	(123)	(124)	(125)	(126)							(153)
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