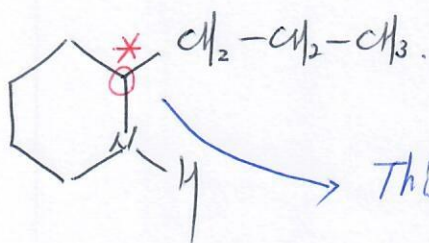


problem 5-2.

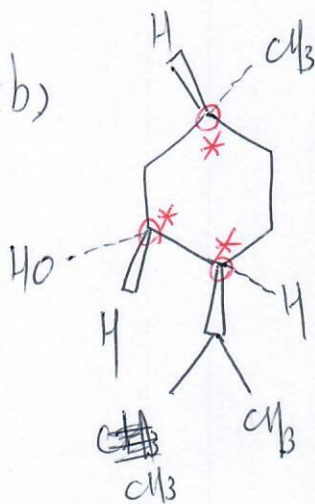
Q: which one is chiral carbon ?

(a)

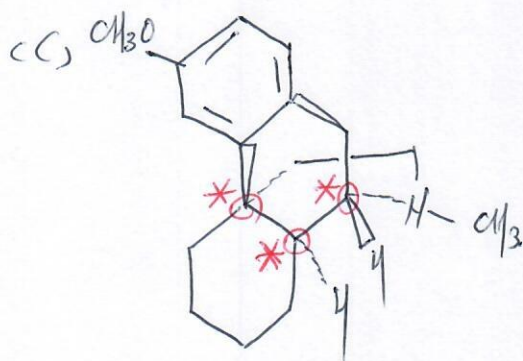


This carbon has four different substituents.

(b)

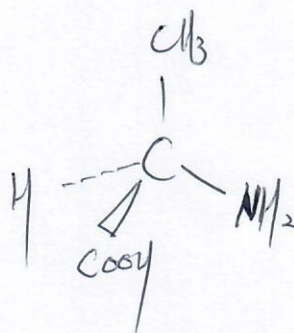
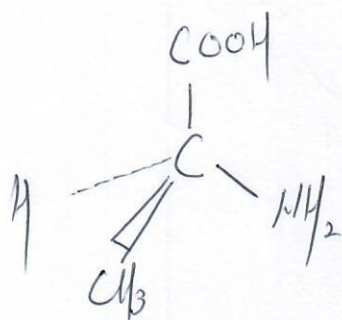


The molecule has
three chiral carbon.

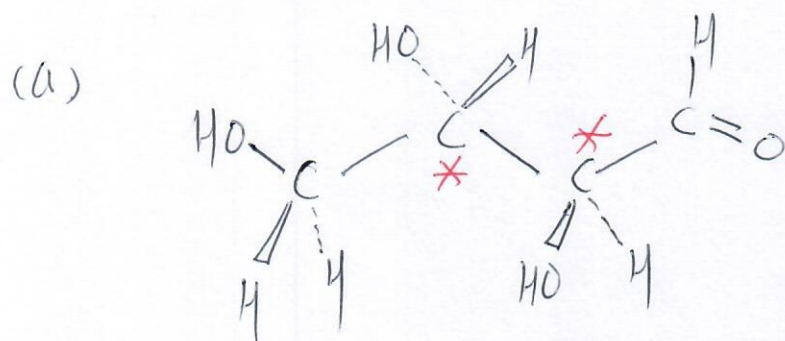


Problem 5-3.

Q: Draw the two enantiomers.

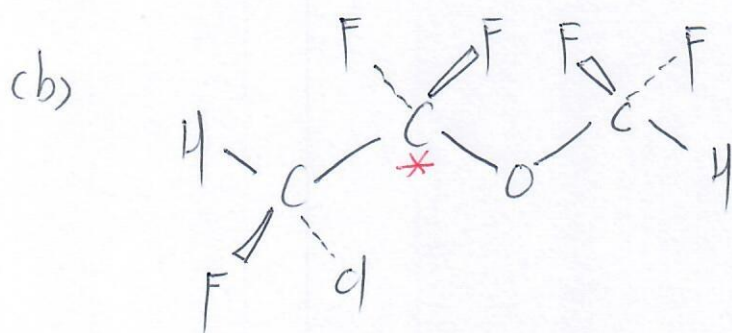


problem 5-4.



Q: which one is chiral carbon or chirality center?

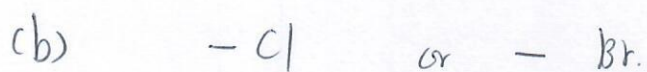
Find the carbon which has four different substituents.



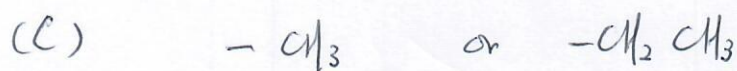
Problem 5-7.1



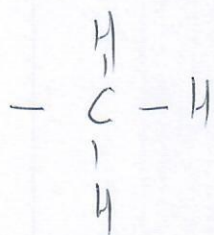
A higher atomic # has priority



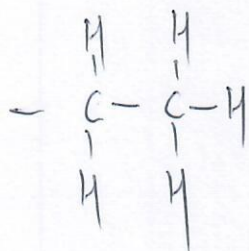
A higher atomic # has priority



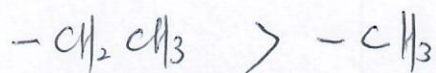
Find and check the second carbon or atom



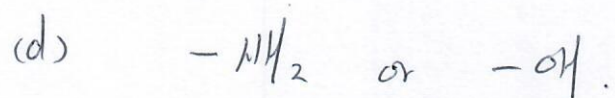
second atom is H.



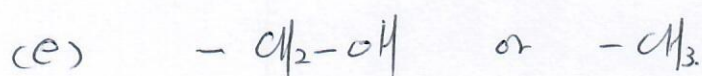
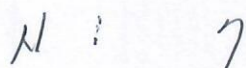
second atom is carbon.



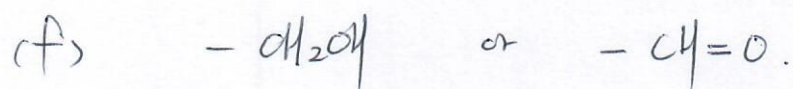
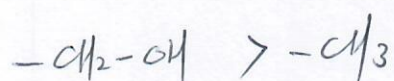
problem 5-7-2



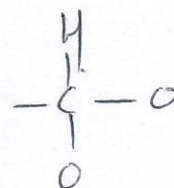
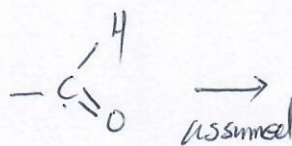
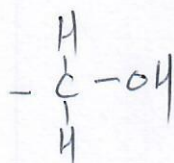
check the atomic #.



check the second atoms.



check the second atoms and multiple bonds.

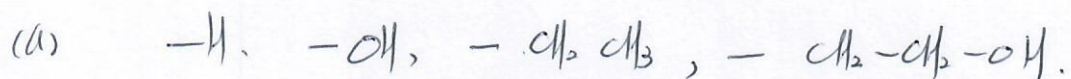


This carbon has two oxygen.



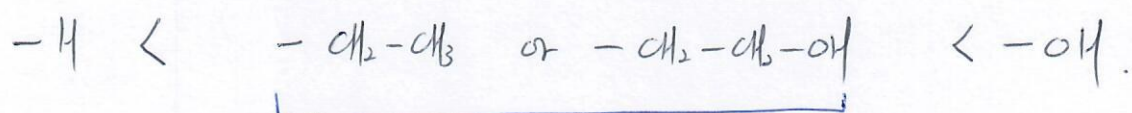
problem 5-8-1

Q: Rank the substituents.



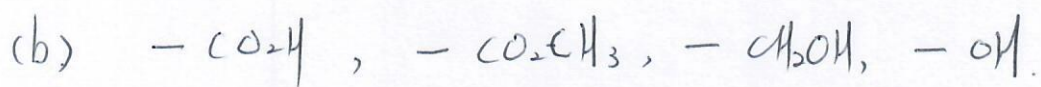
$-H$ has the lowest priority

and $-OH$ has the highest priority

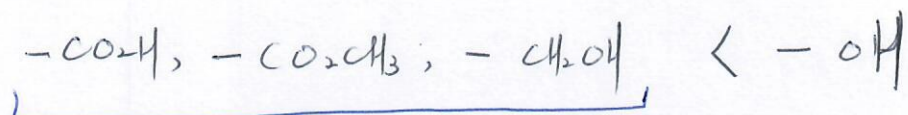


check the second or third atoms.

$-CH_2CH_2OH$ has the oxygen.



O is higher than C.



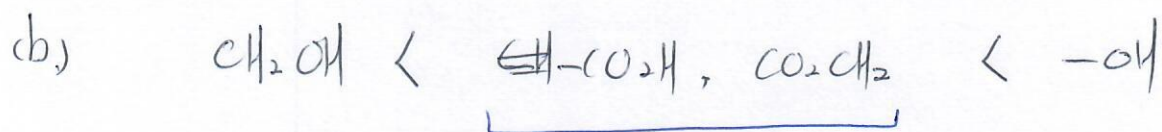
check the second atoms

$-CO_2H$ has two oxygen.

$-CO_2CH_3$ has "

$-CH_2OH$ has one oxygen.

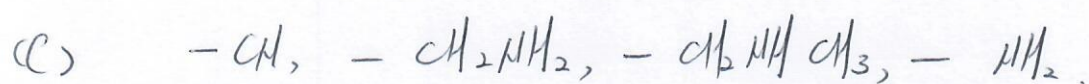
Problem 5-8-2



check the third atom.

$-\text{CO}_2\text{H}$ has proton

$-\text{CO}_2\text{CH}_2$ has carbon.

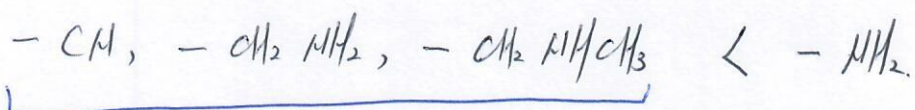


check the first atoms.

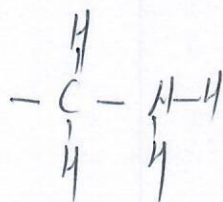
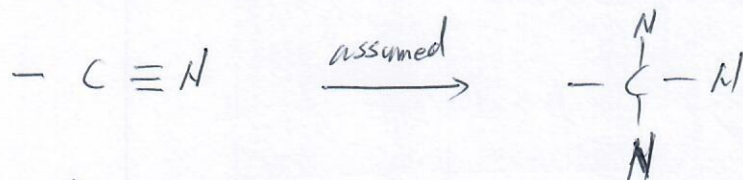
~~then C is~~

The atomic # of C is 6.

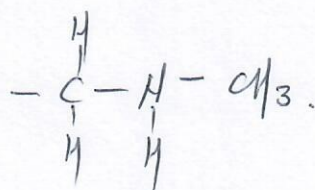
" " N is 7



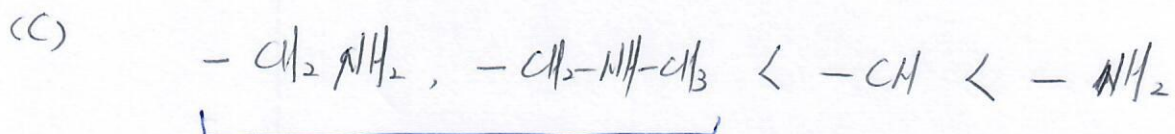
check the second atoms and multiple bonds.



,



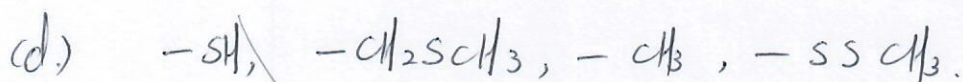
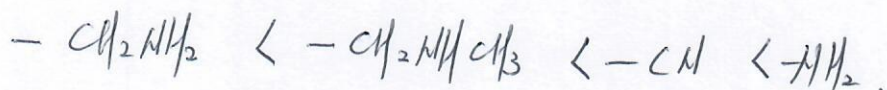
problem 5-8-3



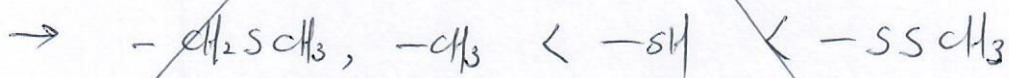
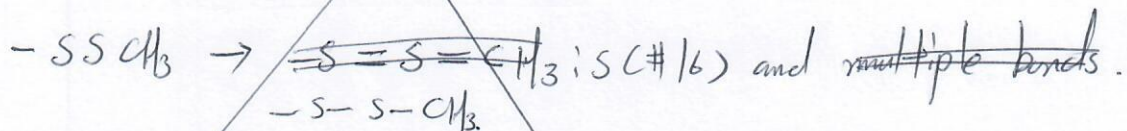
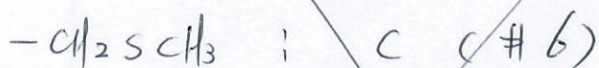
check the third atoms.

$-CH_2NH_2$ has proton (#1)

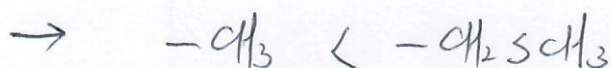
$-CH_2NH-CH_3$ has carbon (#6)



check the first atoms and multiple bonds.



check the second atoms



problem 5-8-4

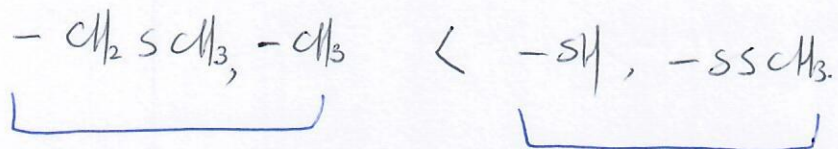
(d) $-\text{SH}$, $-\text{CH}_2\text{SCH}_3$, $-\text{CH}_3$, $-\text{SSCH}_3$

check the first atoms



The atomic # of S: 16

" " C: 6

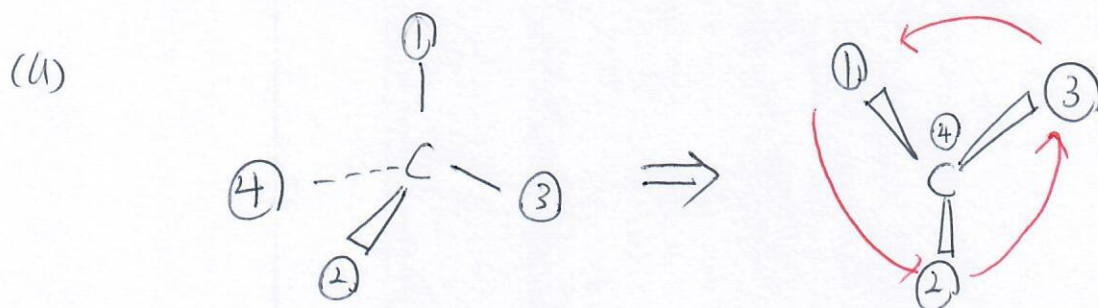


check the second atoms.

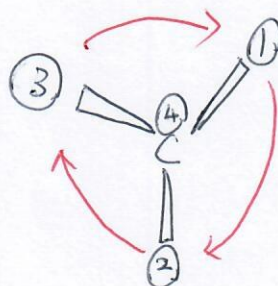
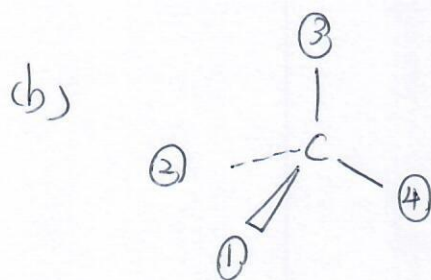


Problem 5-9.

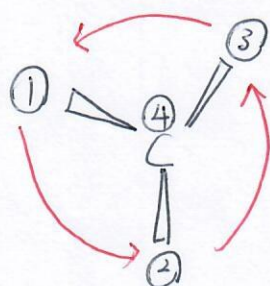
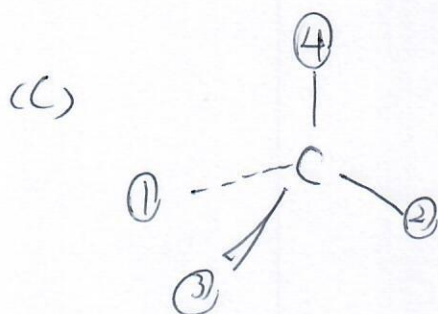
a: Assign R or S configuration; Put ①'s high and ④'s low



The rotation is counter clockwise.
S configuration.



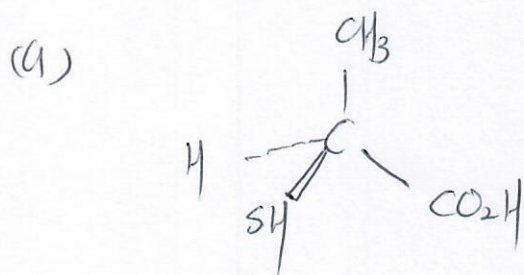
Clockwise
R configuration.



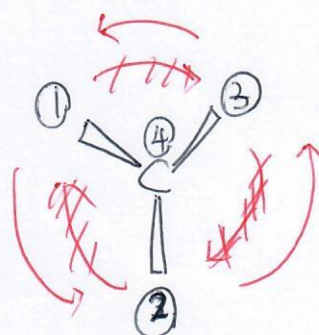
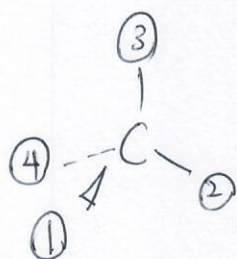
Counterclockwise.
S configuration.

Problem 5-10-1

Q: Assign R or S configuration.

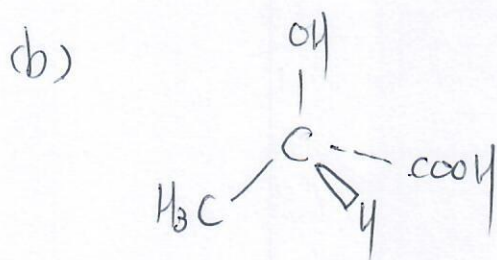


The priority of substituents is
 $-SH > -CO_2H > -CH_3 > -H$.

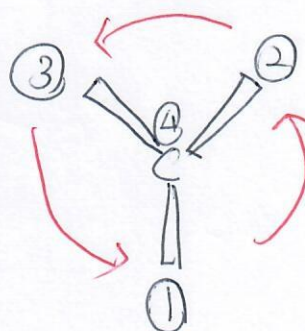
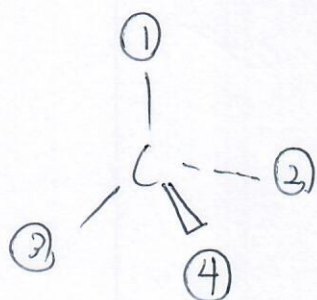


Counter clockwise

S - configuration.



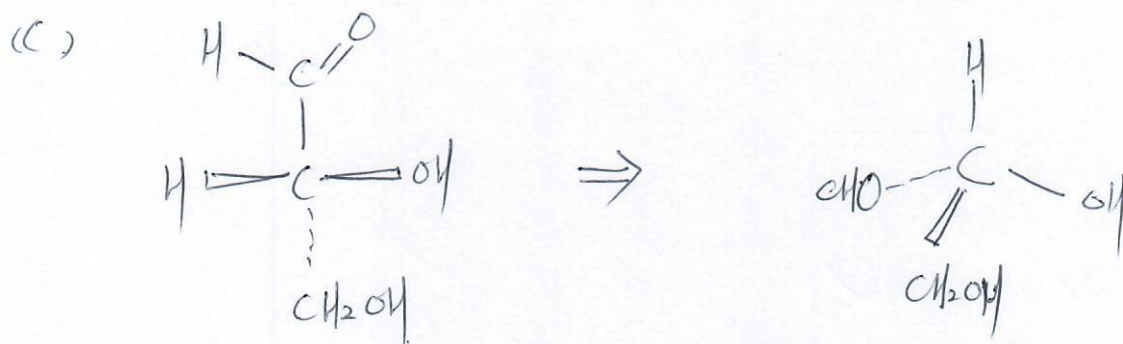
The priority of substituents is
 $-OH > -COOH > -CH_3 > H$



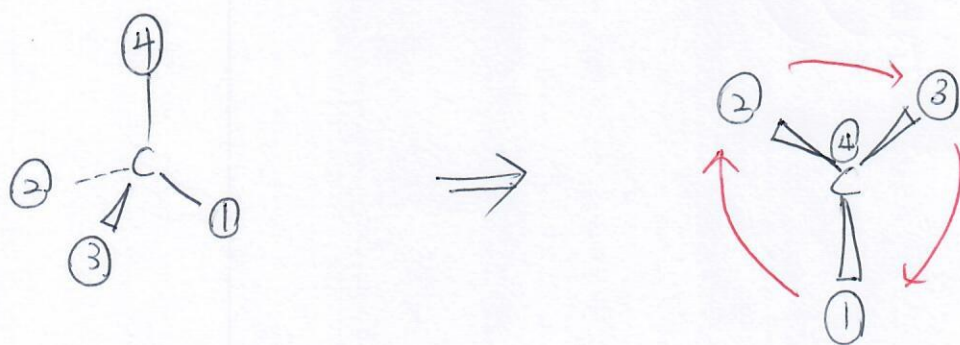
Counter clockwise

S - configuration.

Problem 5-10-2



The priority of substituents is



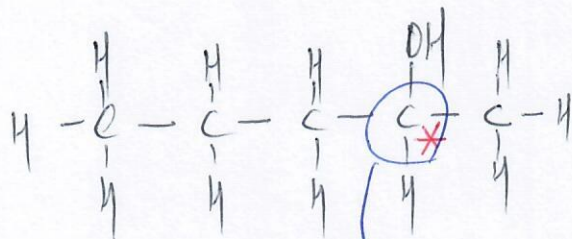
\Rightarrow clockwise

R configuration.

problem 5-11.

Q: Draw the tetrahedral structure.

2-pentanol or 2-hydroxypentane.



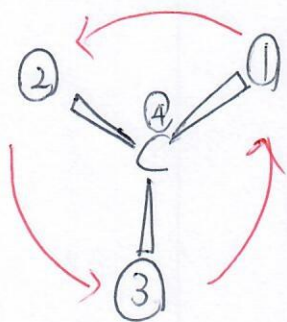
This carbon is chiral carbon.
and S configuration.

The substituents are.

$-\text{OH}$, $-\text{CH}_3$, $-\text{H}$, $-\text{CH}_2\text{CH}_2\text{CH}_3$.

The priority of substituents is

$-\text{OH} > -\text{CH}_2\text{CH}_2\text{CH}_3 > -\text{CH}_3 > -\text{H}$.



S configuration.

