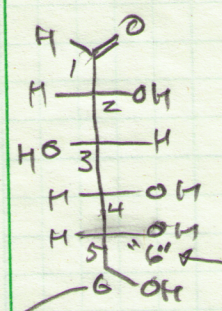
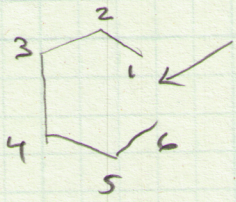


Fischer

① Number chain with the oxygen on highest # chiral C getting the highest number based on ring size.

② Draw a 6-membered ring scaffold based on cyclohexane

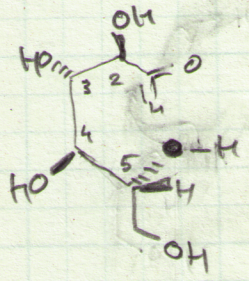


leave this side open

"6"

True 6, but # oxygen as "6" for ring accounting

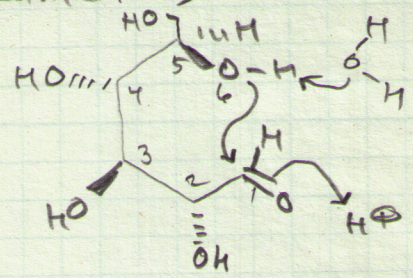
③ Label "ring"

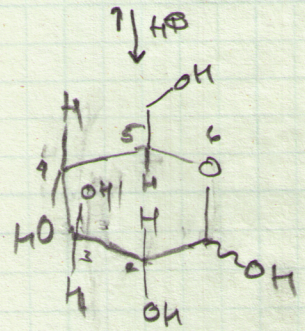


We will want Haworth structure

O is in "back" and draw "highest" in structure

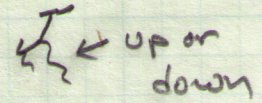
④ Flip entire structure about axis above.
- ⓐ sketch 6-memb ring
- ⓑ keep same # ing





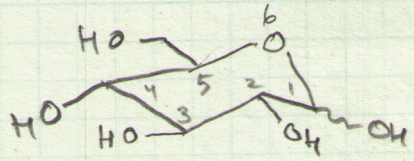
Haworth

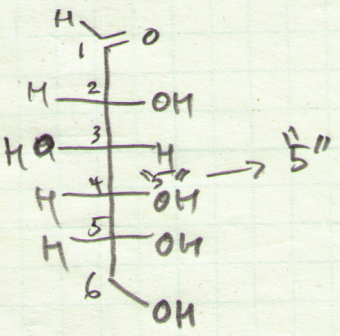
⑤ Close 6-memb ring

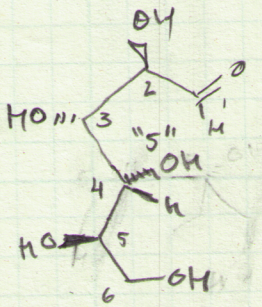


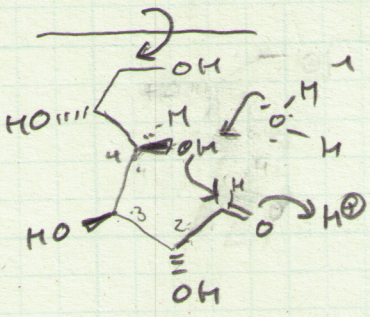
up or down

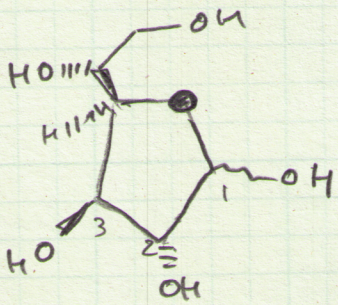
chair

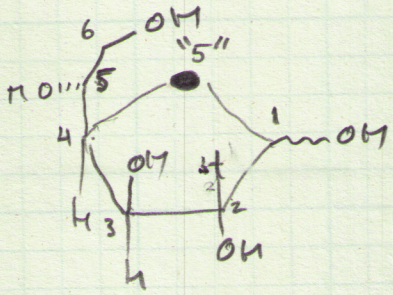




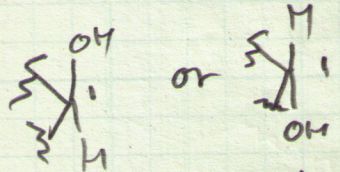








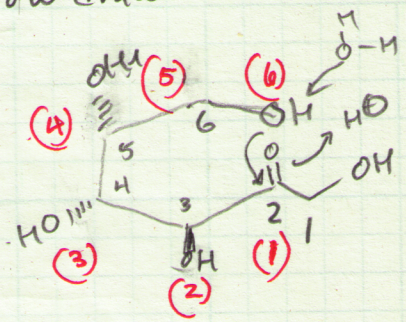
Keep like this no chair or envelope structure



epimeric at C1

Similar idea with ketoses!

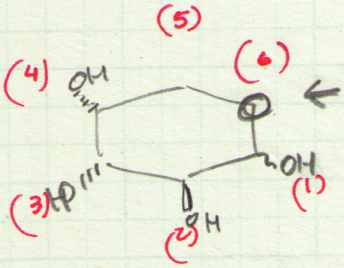
After flip of Fructose (Note the most oxidized C=O is now drawn at the tail end.



Red # ing help establish ring of furanose or pyranose.

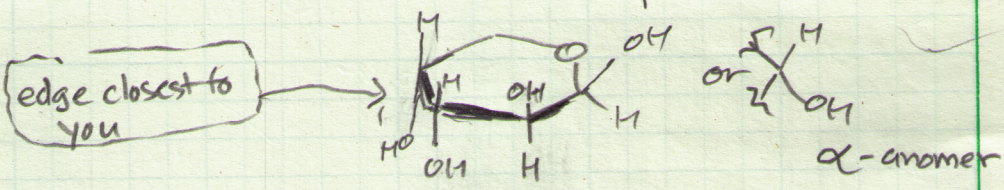
First: 6-memb ring
Penaled #s are actual chain #s

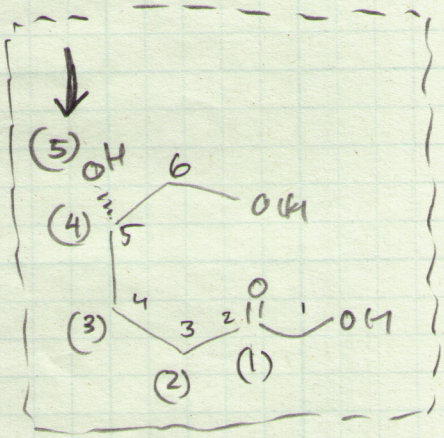
Sketch 6-memb ring



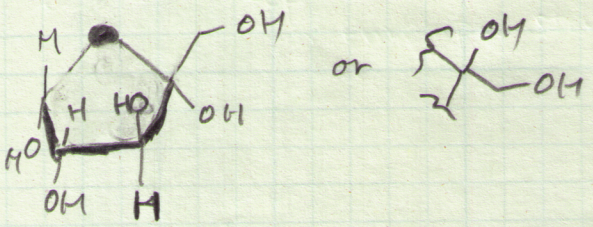
Haworth

β-anomer

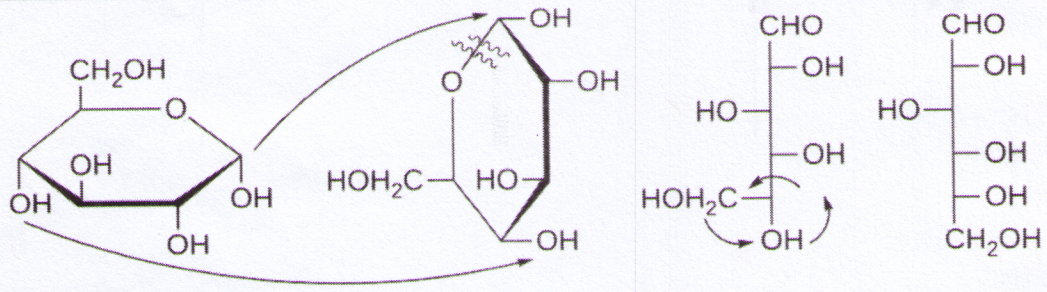




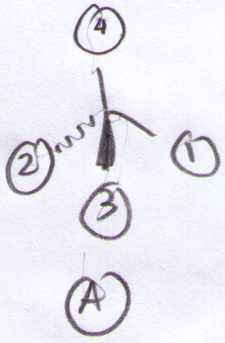
Similar for 5 memb ring



P rotate 90° CCW Q T U



Get #4 on dashed line by switching (2) and (4)

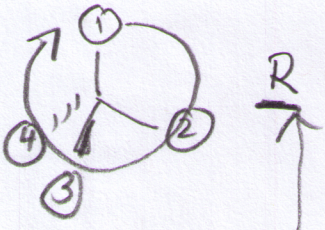


(A)

S

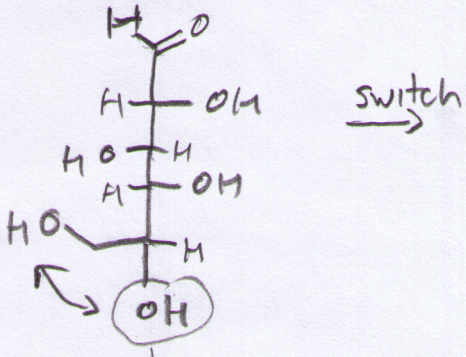
This is the enantiomer of (A)

(C) Keep (4) in place and switch any other two numbers

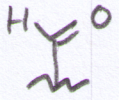


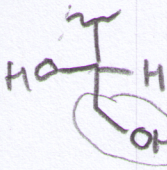
R

So look at structure (T) above; how do you convert to (U)



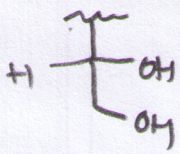
switch

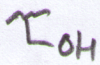




Leave here, switch the other two

This center is the mirror image of the original.

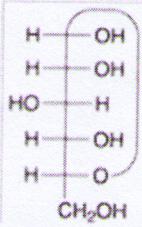


want 

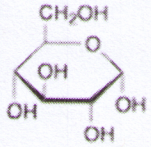
Here

So, switch (OH) and 

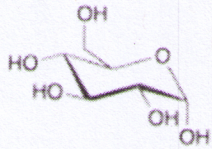
IDENTICAL



Fischer

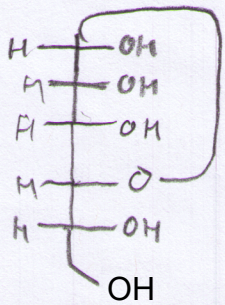


Haworth



Chair

(practice drawing with rounded edges even though you see sharp edges in other resources)



5-membered ring furanose