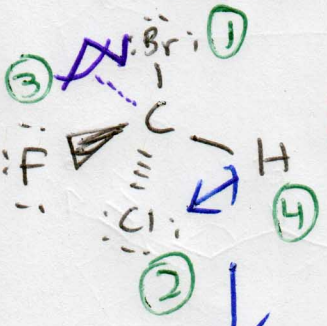
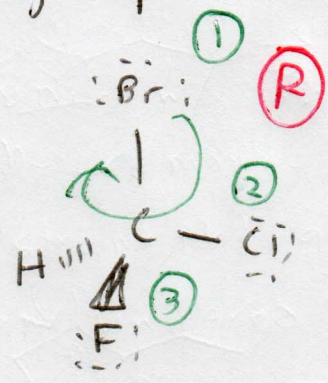
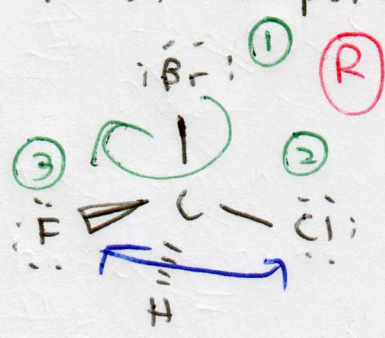


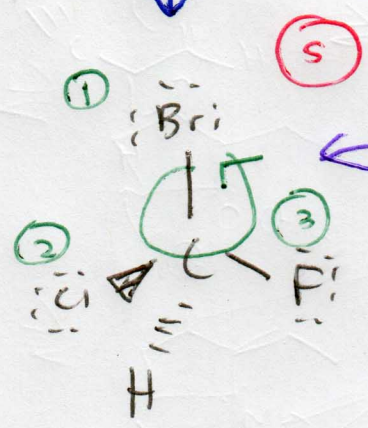
### Fischer projection



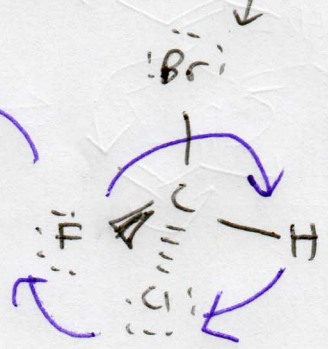
The apparent configuration of this stereo center is R, when viewing (improperly) the structure in the 2D plane of the page. Instead, the molecule must explicitly be viewed so that the least important group is oriented away from the viewer.



If two groups on a tetrahedron are exchanged, the configuration is inverted.

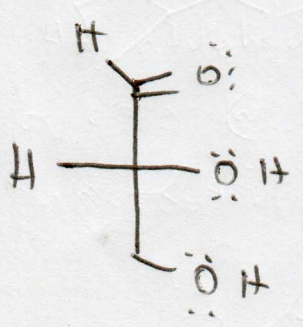


(original)

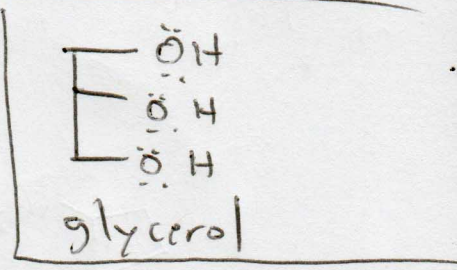


\* Swapping the positions of two substituents twice has the same effect on tetrahedral geometry as rotation.

### Carbohydrates - $(CH_2O)_x$

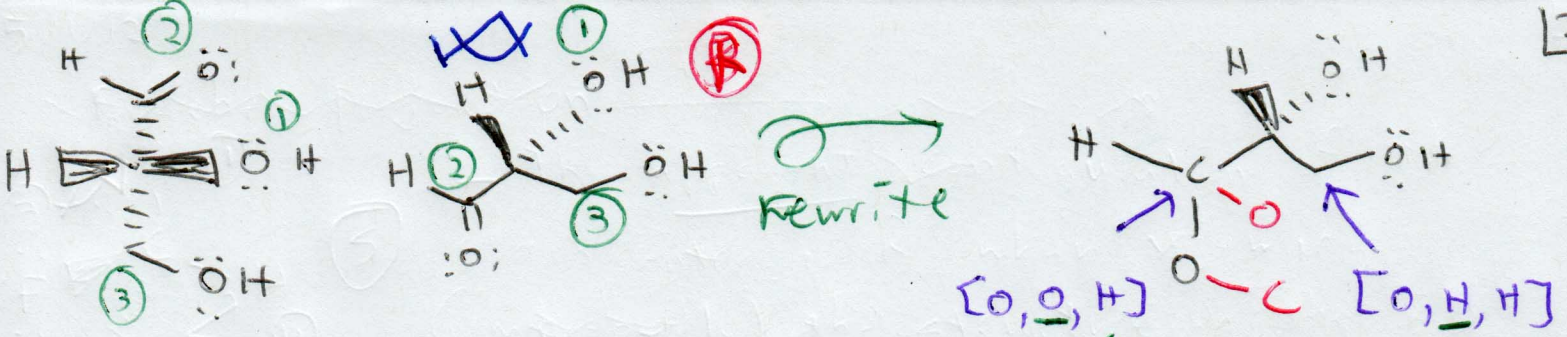


By definition, any group written on the "backbone" (vertically) is oriented away

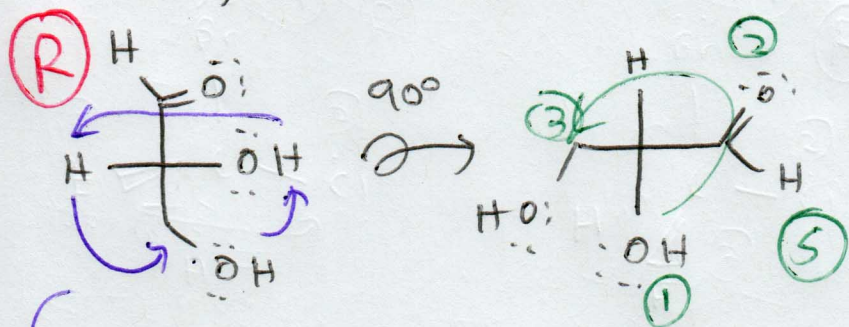


D-glyceraldehyde

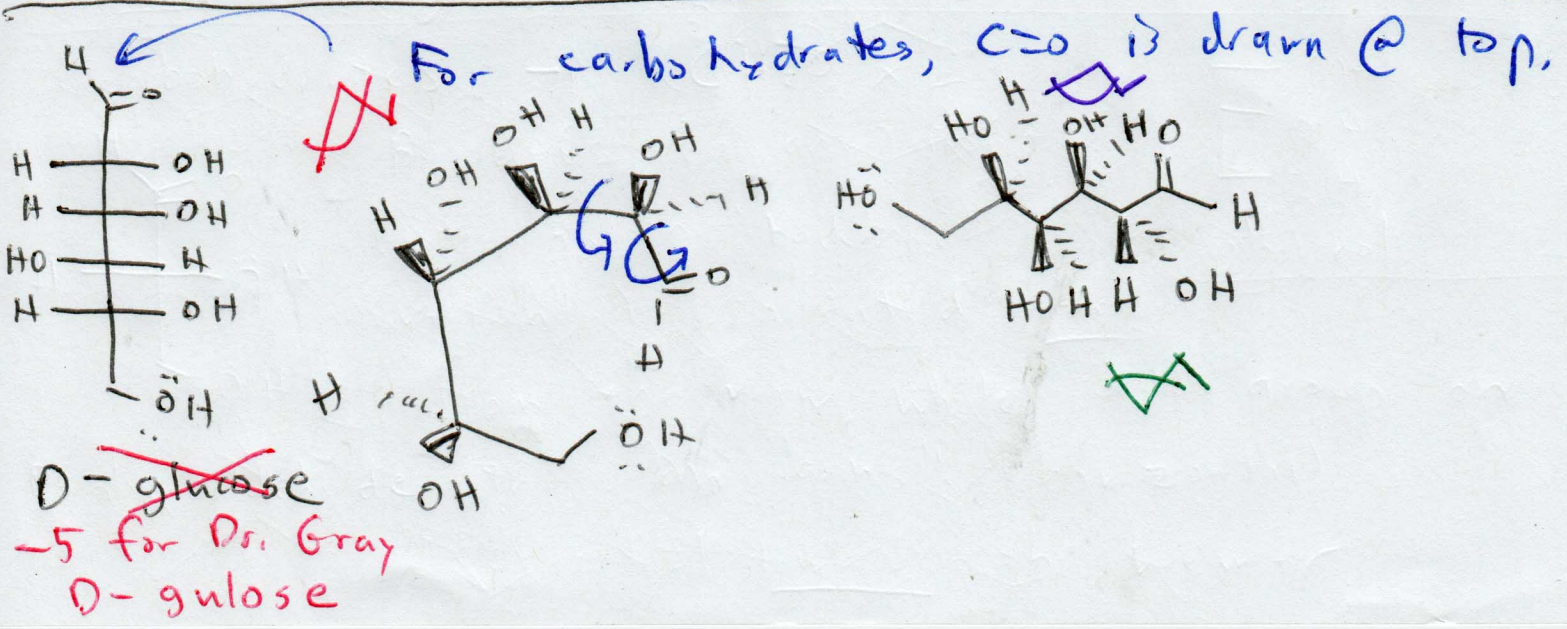
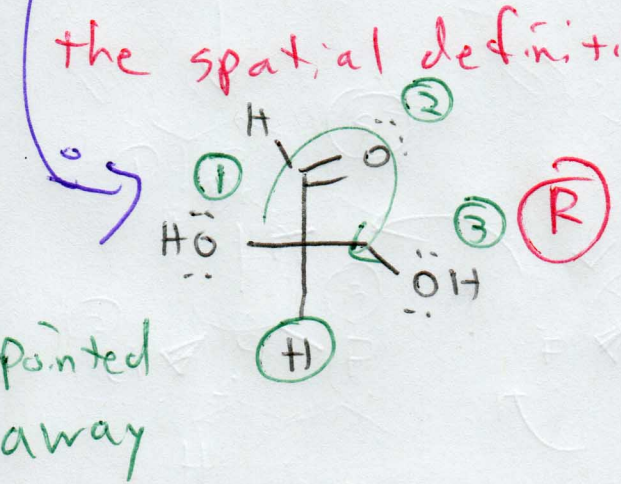
from the view, while any group on the "arm" (horizontal) is oriented towards the viewer.

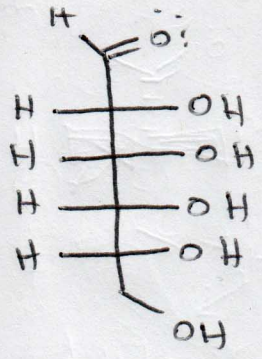


Although the groups appear to be in the  $S$  configuration, the least important group is oriented towards the view, so that apparent configuration must be inverted. (it's really  $R$ ).

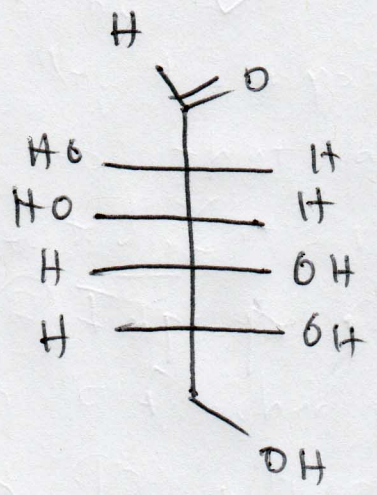
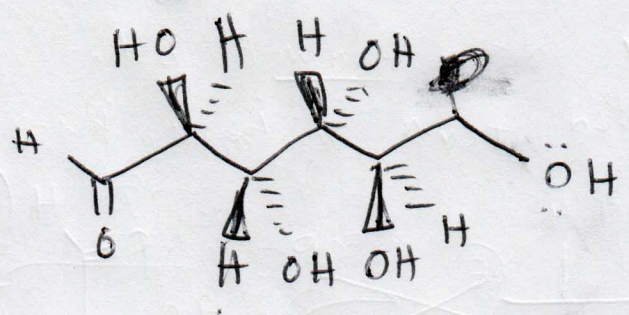
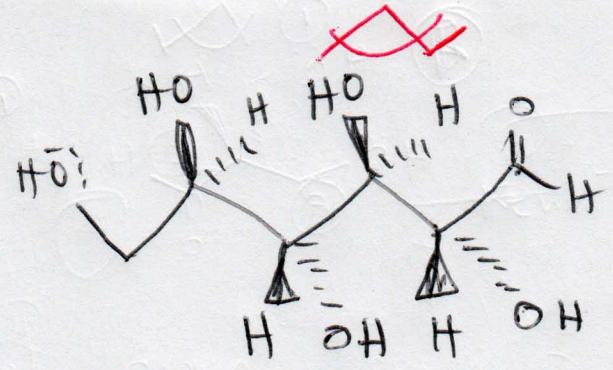


Improper rotation of a Fischer projection by  $90^\circ$  will cause inversion of configuration, due to the spatial definition of a Fischer projection.





D-xylose



D-mannose

D-glucose