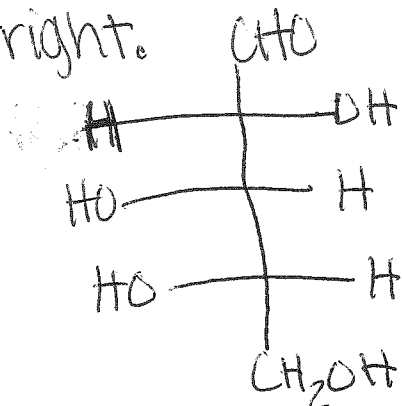


## 12:2 Monosaccharides

36) A D-sugar and an L-sugar are enantiomers, non-superposable mirror images, stereoisomers, of each other.

37) a) The Fischer projections shown are D-sugars. The OH group that is farthest away from the CHO group is pointing to the right.

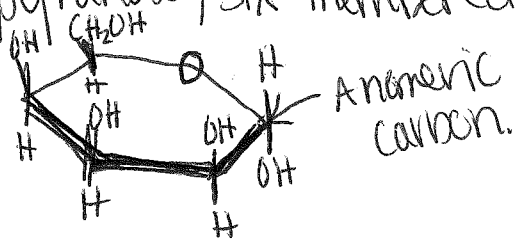


b) L-arabinose

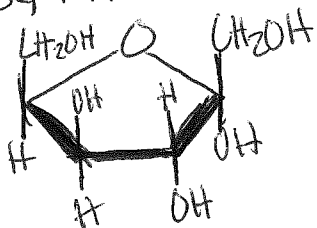
c) D-arabinose and D-xylose are diastereomers. The OH group and H groups are reversed at C-2 and C-3.

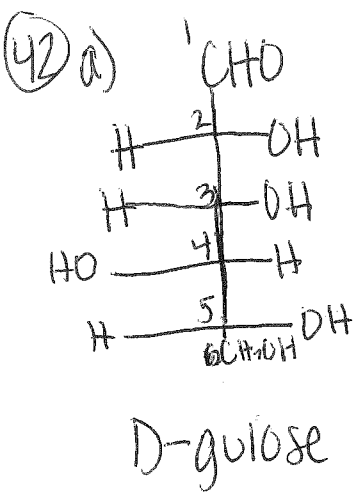
38) In the  $\alpha$  anomer, the OH group on the anomeric carbon is pointing down. In the  $\beta$  anomer, the OH group on the anomeric carbon is pointing up.

40) a) pyranose, six-membered ring,  $\alpha$  anomer, OH group pointing down

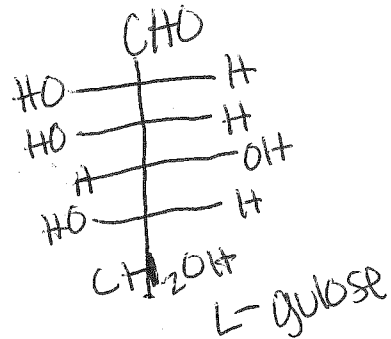


b) Furanose, five-membered ring,  $\alpha$  anomer, OH group is pointing down

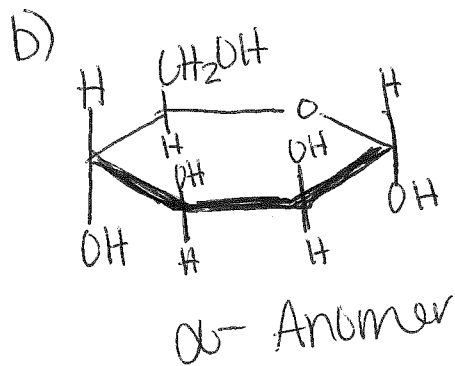
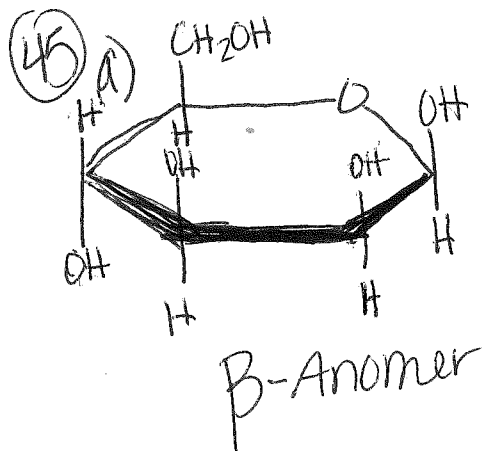




- b) The OH group on the ~~5th~~ carbon-5 determines its a D-sugar
- c) D-gulose are enantiomers, non-superposable mirror images.



d) D-gulose & d-glucose are diastereomers.



c) These structures are diastereomers

d) These two sugars interconvert through a process called mutarotation. The ring of one anomer opens to give the open-chain form and then recloses to give the other anomer.