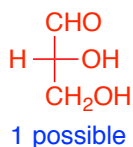
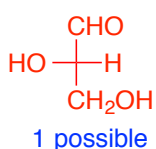
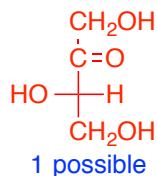
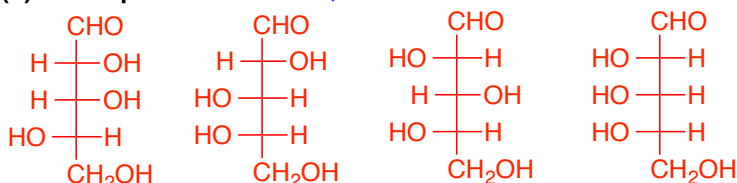


Chapter 26 #16 & 17 – key in McMurry solutions manual**A. Definitions** – no key provided, use glossary, wiki, etc.!**B. Structural Conventions**

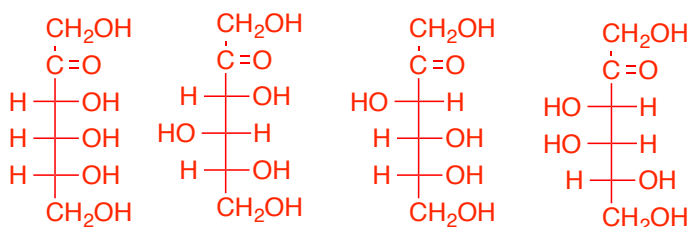
1. Draw one example of each of the following types of monosaccharides (there may be several correct answers) and indicate the number of possible stereoisomers while keeping the same D/L configuration.

(a) D-Aldotriose**(b) L-Aldotriose****(c) L-Ketotetrose****(d) L-Aldopentose**

4 possible

**(e) D-Ketohexose**

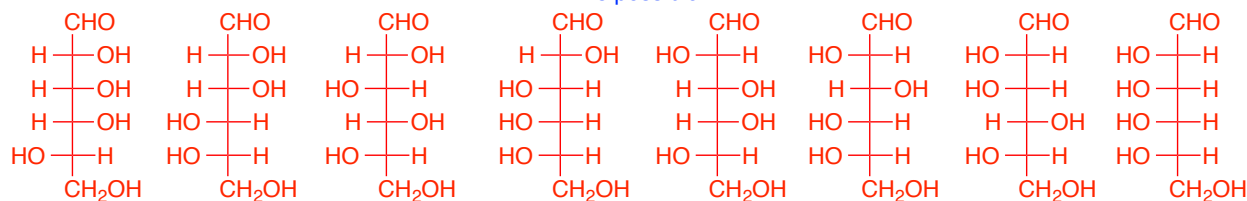
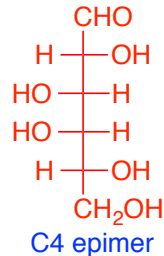
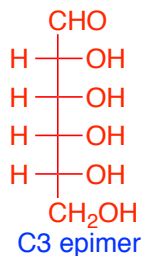
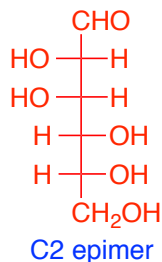
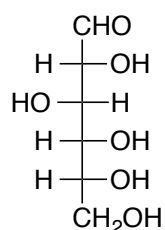
4 possible



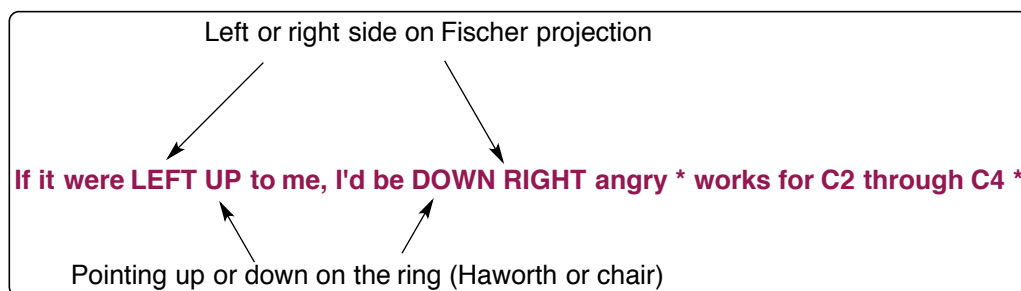
ANY ONE EXAMPLE IS CORRECT FOR (d), (e), & (f). I WOULDN'T EXPECT YOU TO DRAW ALL STEREOISOMERS ON AN EXAM!

(f) L-Aldohexose

8 possible

**2. Fischer projections of D-glucose's epimers****D-Glucose**

3&4. Draw Haworth projections & chair conformations for the following (consult Fig 25.3 of McMurry; memorize the structure of D-Glucose for the second exam).

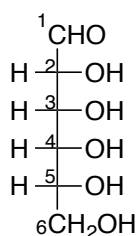


(a)

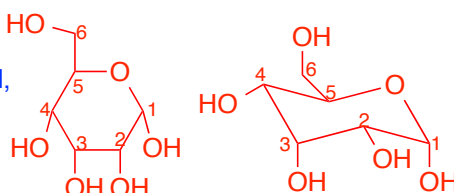
Haworth

Chair

The C5 CH₂OH (penultimate) group always points "up" for D-sugars

**D-Allose**

Bonds in Haworth projections are up/down only, no axial or equatorial, no wedge/dash

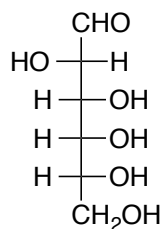
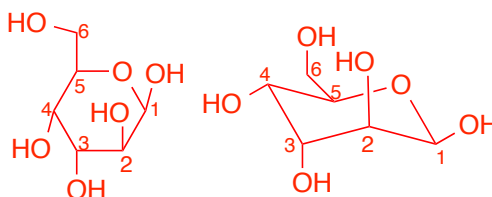


C1-C4 are "down" but alternate axial-equatorial. Take special note of the angles of the equatorial groups - parallel to bonds in the ring.

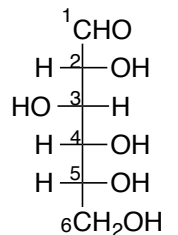
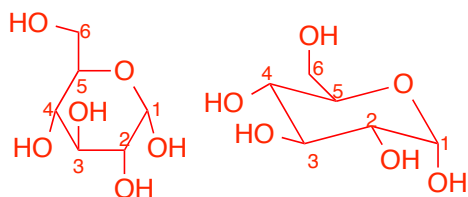
C1 OH (anomeric) points "down" for alpha (α)

 α -D-Allopyranose

(b)

**D-Altrose** **β -D-Altropyranose**

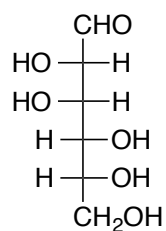
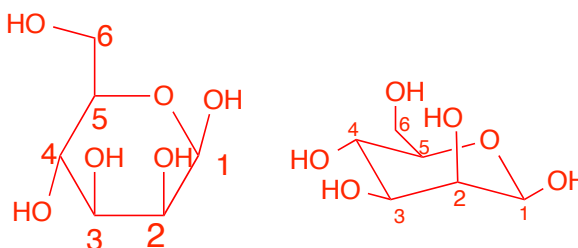
(c)

**D-Glucose**

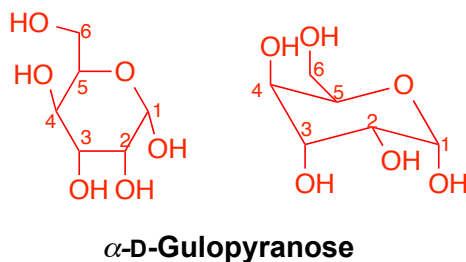
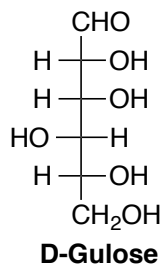
Everything except C3 is the same as part (a)

 α -D-Glucopyranose

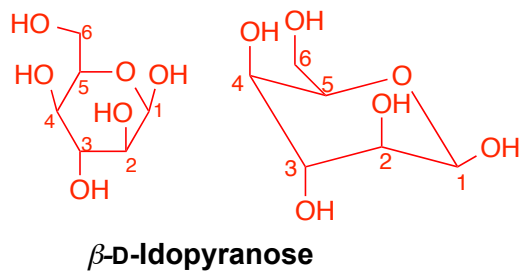
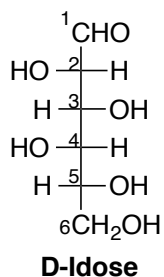
(d)

**D-Mannose** **β -D-Mannopyranose**

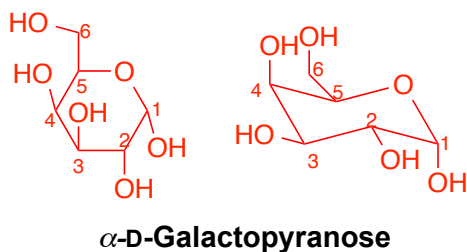
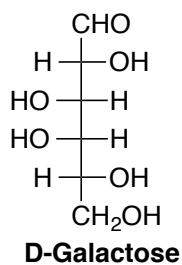
(e)



(f)



(g)



(h)

