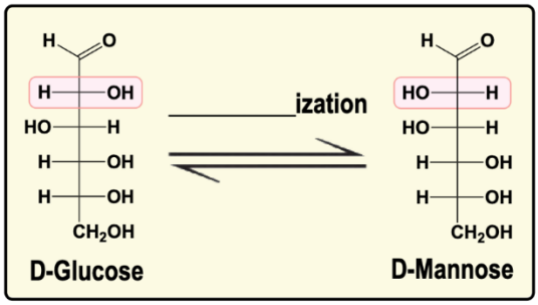
CONCEPT: MUTAROTATION

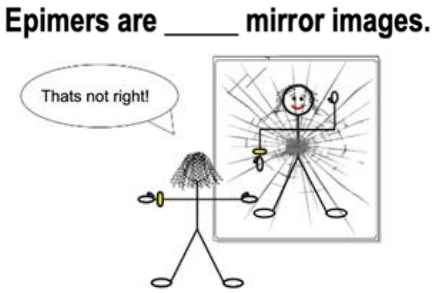
Epimerization

●_____: process of interconverting *epimers* (changing one epimer into the other epimer).

□ Recall: epimers are diastereomers that differ ONLY in configuration of *any* one-_____ chiral carbon.

□ Requires a _____ to break & reform the *stable* covalent bonds & change the _____.





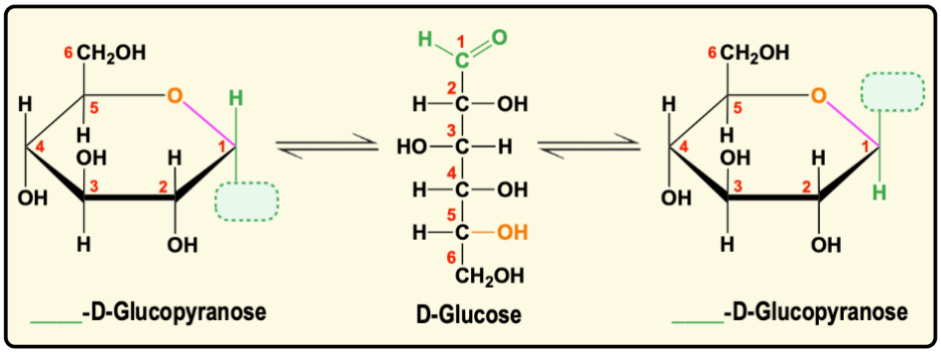
Mutarotation

●_____: a specific type of *epimerization* that interconverts _____ (ex. converting α to β anomers).

□ Only _____ *anomeric carbons* forming a *hemiacetal* or *hemiketal* mutarotate.

●Mutarotation breaks/reforms bonds; HOWEVER, since hemiacetals/hemiketals are *unstable*, _____ catalyst is needed.

□ One ring anomer *briefly* opens up to the linear chain, then closes again to produce opposite ring anomer.



PRACTICE: The transformation of a monosaccharide to its _____ occurs easily and does not require a catalyst.

a) Epimer. b) Anomer. c) Diastereomer. d) Enantiomer.

PRACTICE: Which of the following sugars undergoes mutarotation in neutral aqueous solution?

a) I and III.
b) III and IV.
c) II, III and IV.
d) I and IV.
e) I, II and IV.