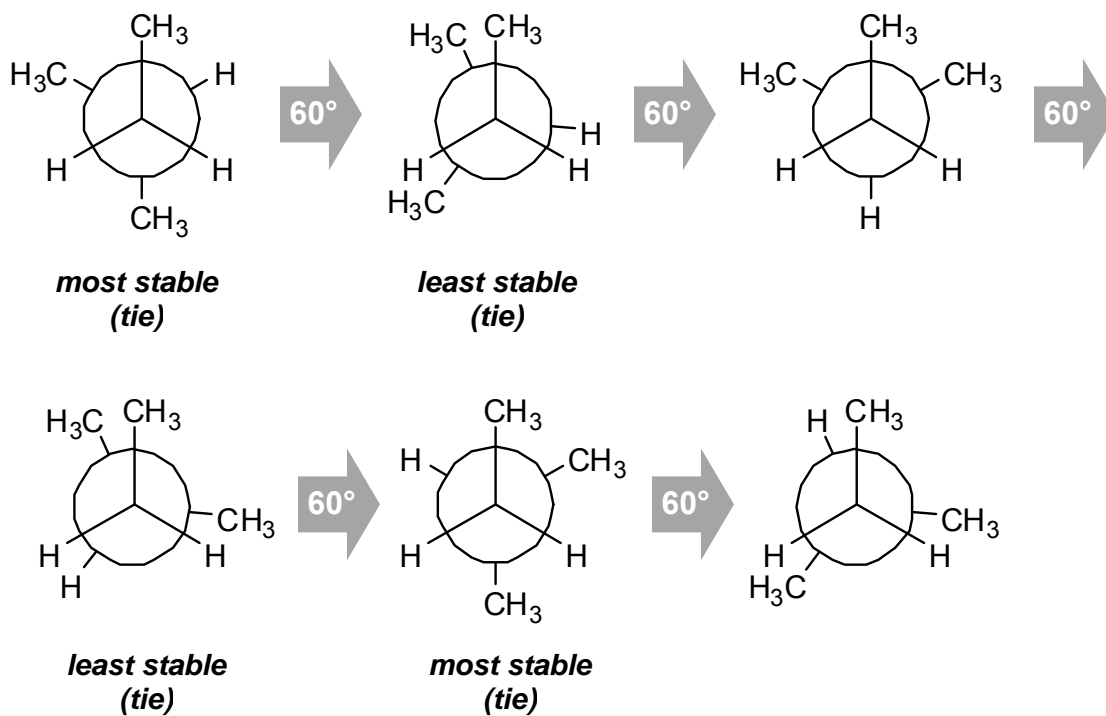


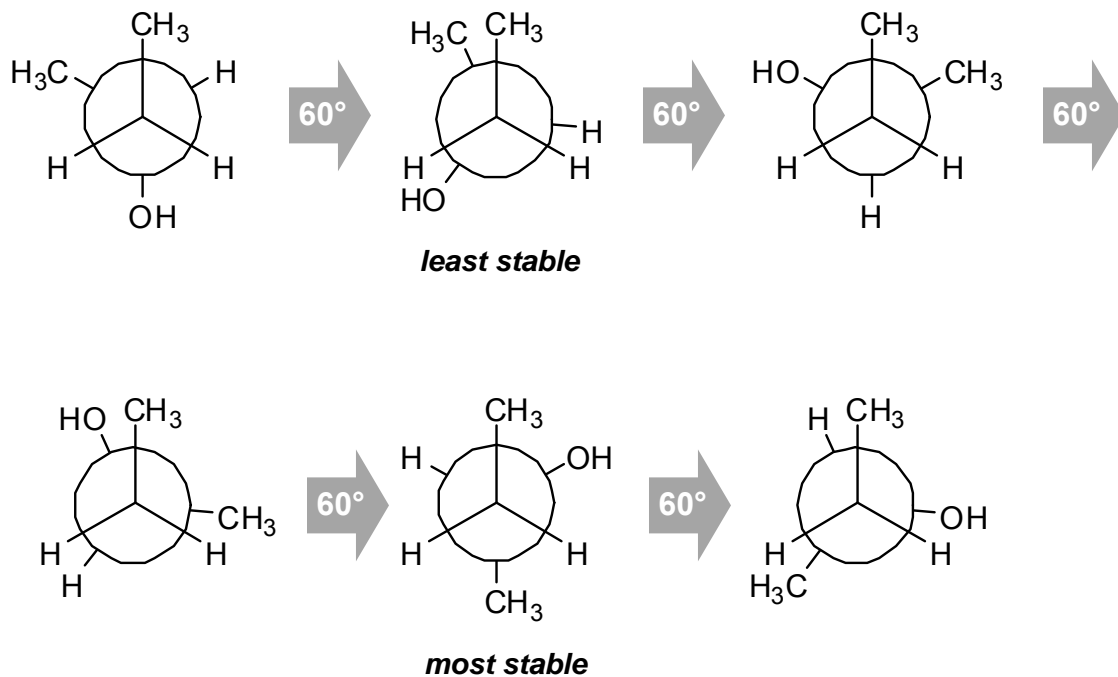
In-Class Exercise Solutions  
Newman Projections

1. Rotating the group in the back,



Staggered conformations with only one gauche interaction are the most stable. Eclipsed conformations with one totally eclipsed methyl-methyl interaction are the least stable.

2. Again rotating the group in the back,



-OH is slightly less repelling than  $-\text{CH}_3$ , and  $-\text{OH}/-\text{CH}_3$  eclipsing interactions are not as bad as  $-\text{CH}_3/-\text{CH}_3$  interactions, because (i) the  $\sigma$ -bond to H can swing away from the opposing  $-\text{CH}_3$ , and (ii) the O lone pairs that would then swing towards the  $-\text{CH}_3$  are held more closely to the O nucleus than a bonding pair would be, and thus don't repel across the divide as much. So there are no ties in this case.

