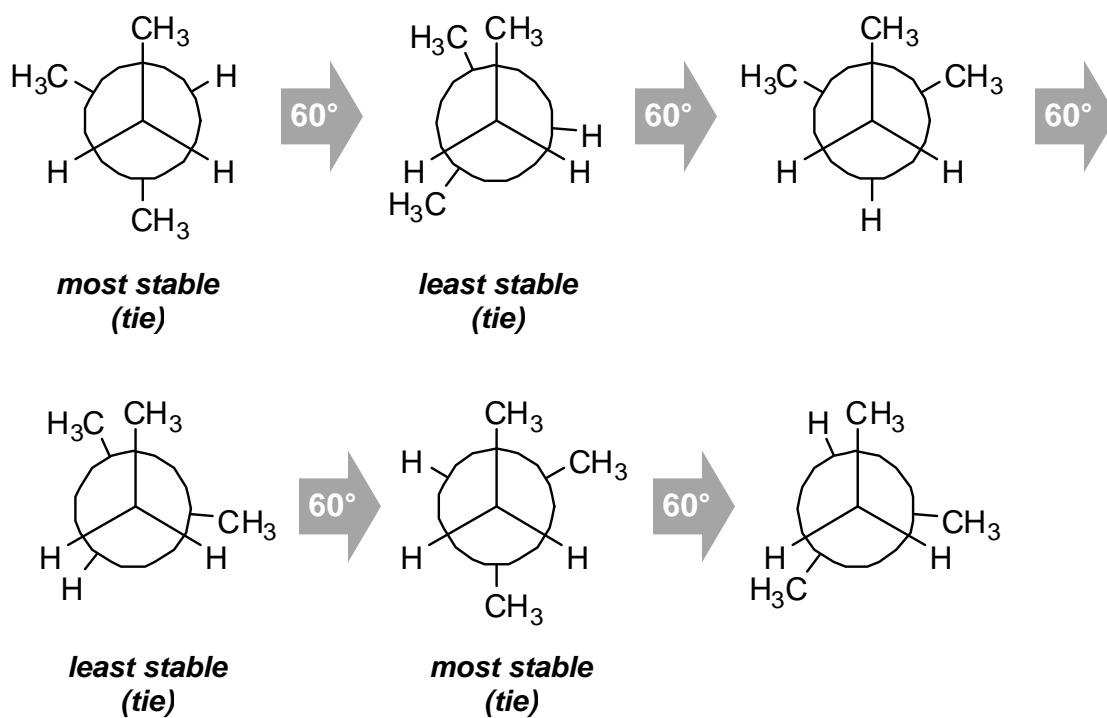


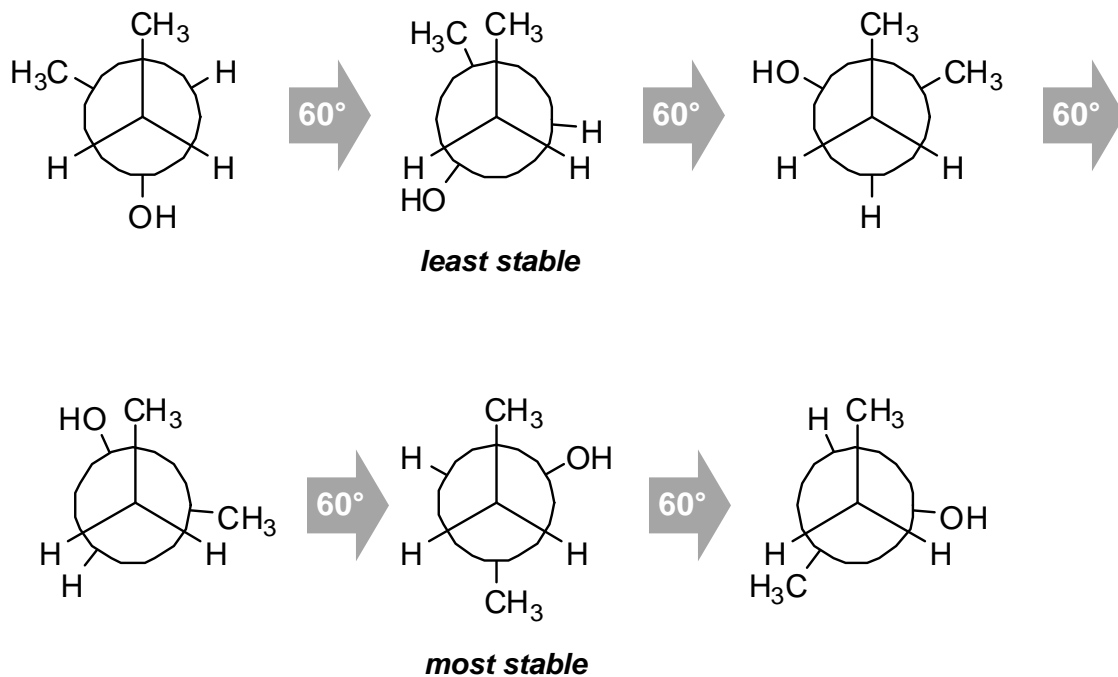
**In-Class Exercise Solutions
Newman Projections**

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 σ -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.

