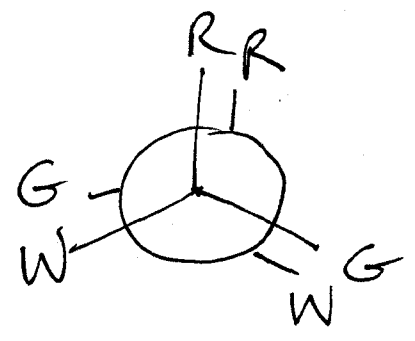
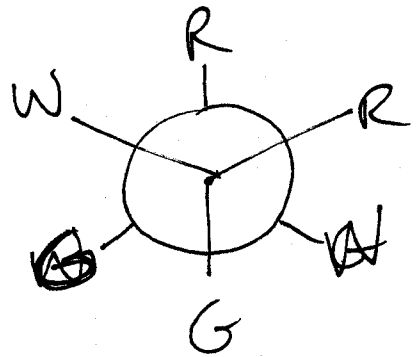


Newman Projections - a way of looking at different conformations of the same molecule.

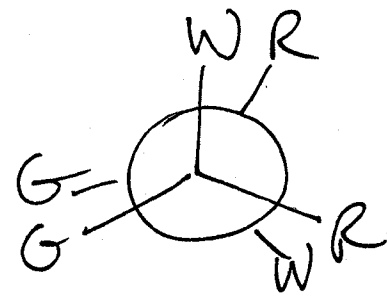


$\xrightarrow{60^\circ}$



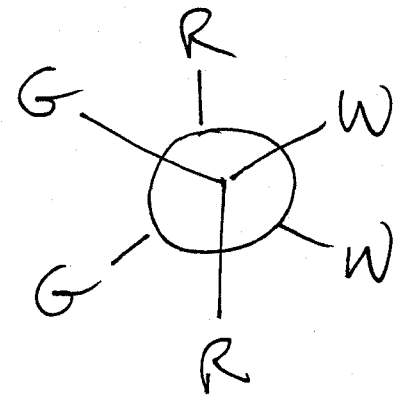
staggered

$\xrightarrow{60^\circ}$



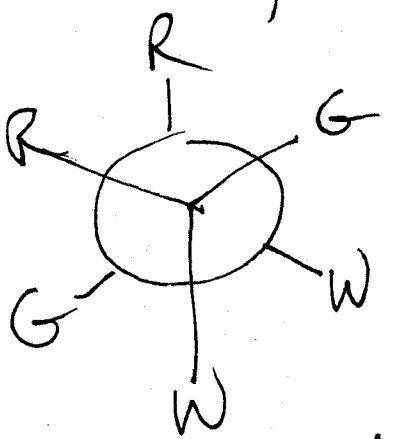
eclipsed

$\xrightarrow{60^\circ}$



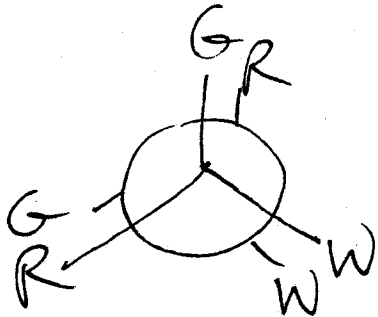
staggered

eclipsed
 $\uparrow 60^\circ$



staggered

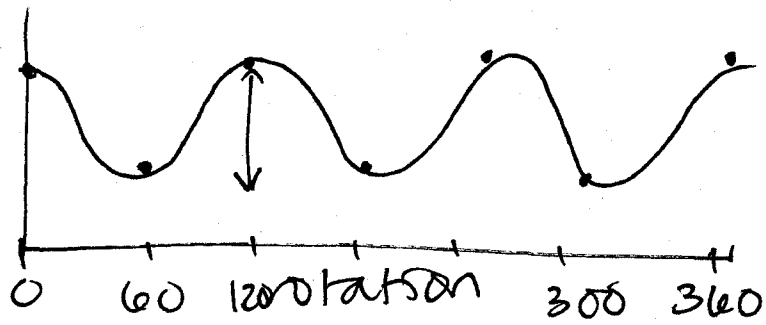
$\xleftarrow{60^\circ}$



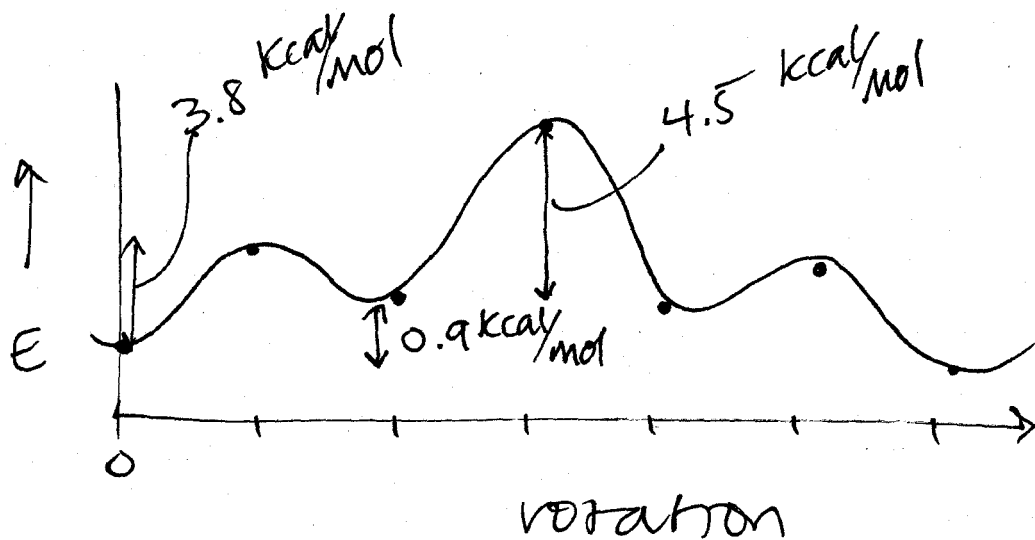
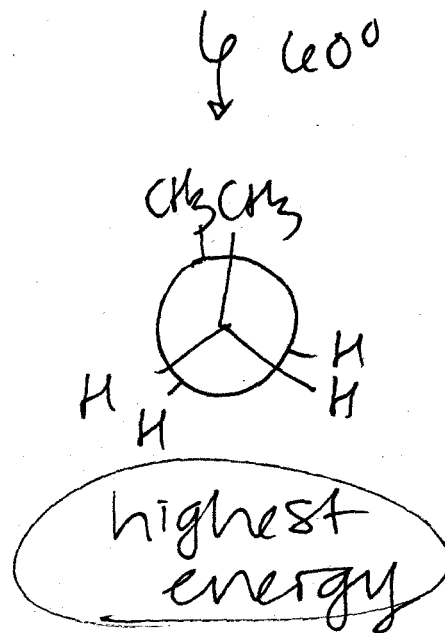
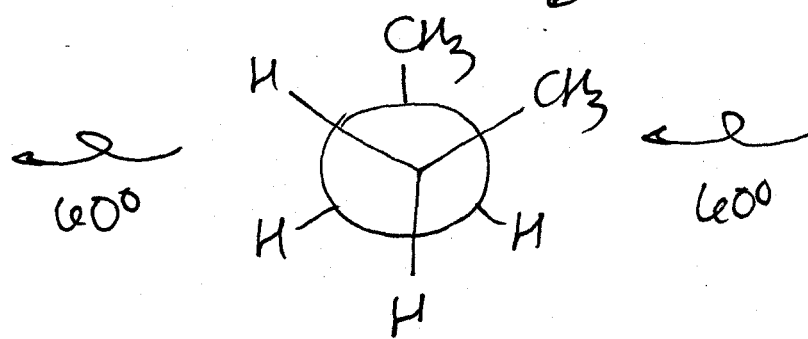
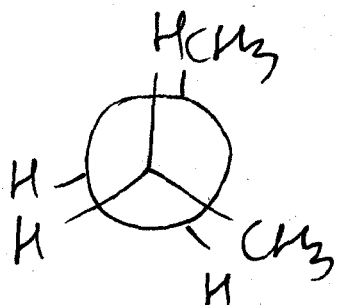
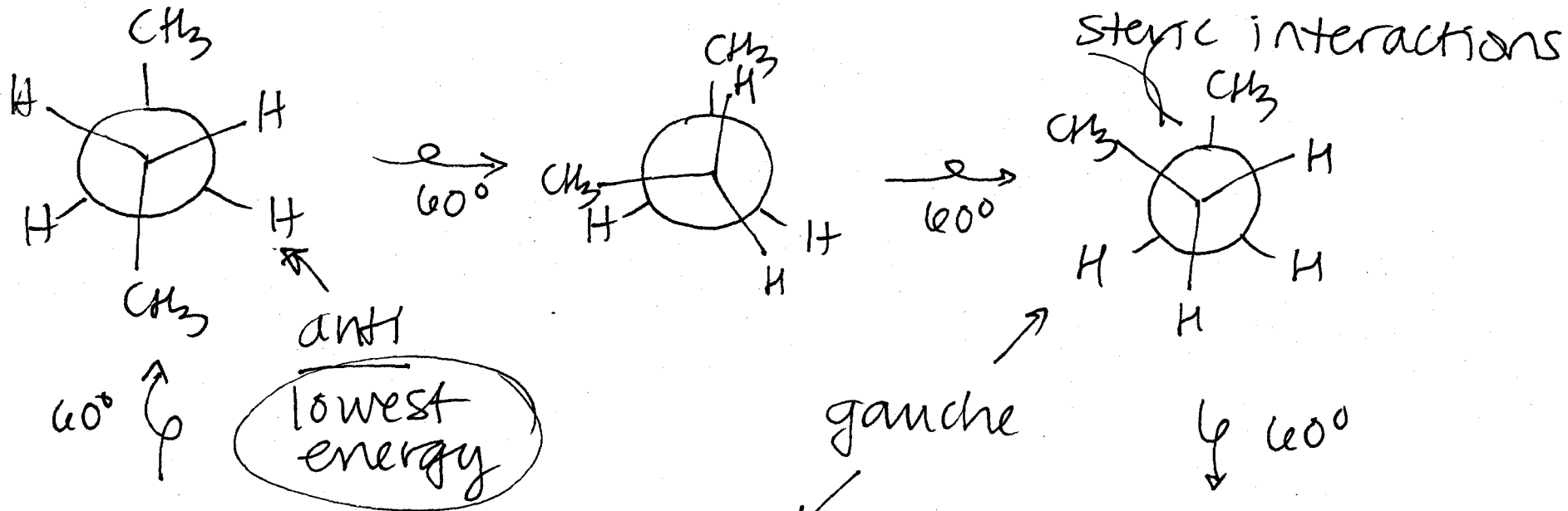
eclipsed

$\xleftarrow{60^\circ}$

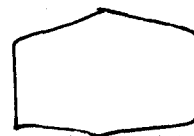
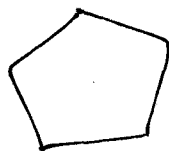
ethane:
rotational
barrier
= 2.8 kcal/mol



rotational
energy
diagram



Conformations of Cyclic Alkanes



Initial thinking - small rings can't exist!

<u>Ring</u>	<u>Bond \angle</u>
3	60°
4	90°
5	~ 110
6	$\sim 120^\circ$
7	bigger yet

compare to tetrahedral \angle
 109.5°

* they assumed all rings are planar.

But they aren't.
(except cyclopropane)

etc
↓