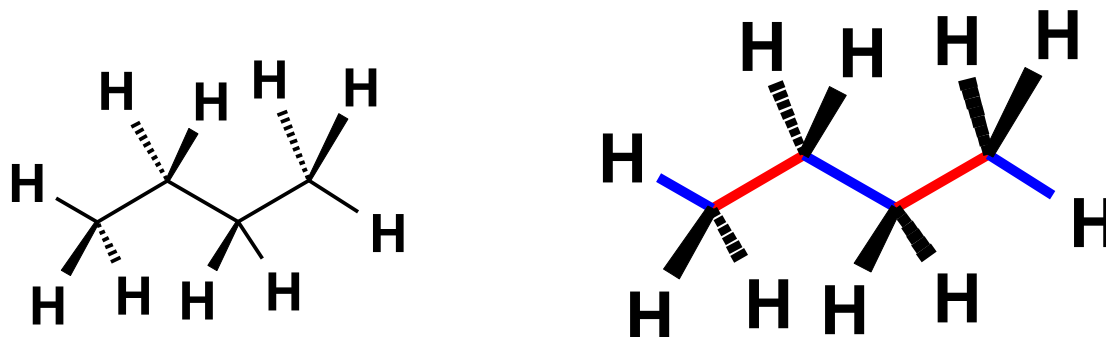


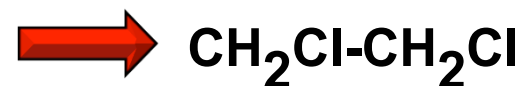
Esercitazione sulle conformazioni di alcani e cicloesani

1. Disegnare la molecola completa del butano, nella conformazione più favorevole per tutti i legami C-C (usare i legami a cuneo e tratteggiati).

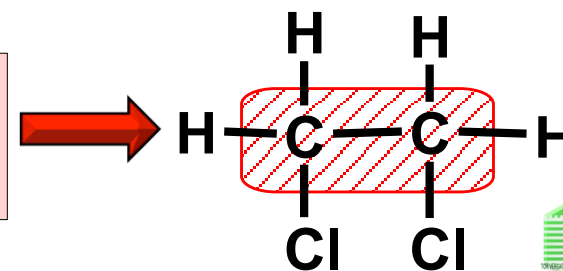


2. Mediante le formule di Newman e quelle a cavalletto, rappresentare le conformazioni dell'1,2-dicloroetano corrispondenti ai minimi ed ai massimi di energia (conformazioni limite). Costruire in ogni caso il diagramma di energia potenziale.

★ 1 Per prima cosa, scrivere la formula

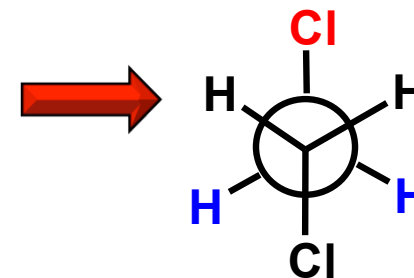


★ 2 Poi, individuare il legame C-C interessato e mettere in evidenza i legami per ciascuno dei due C

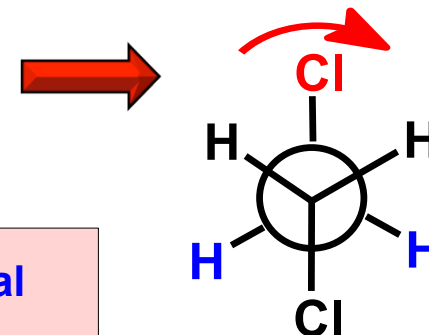




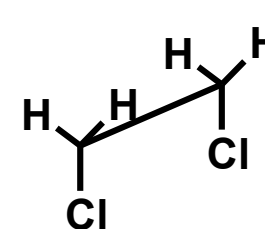
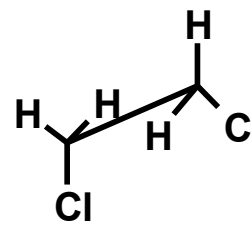
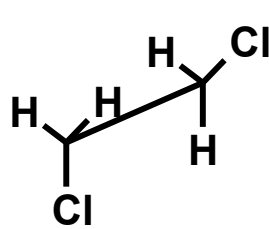
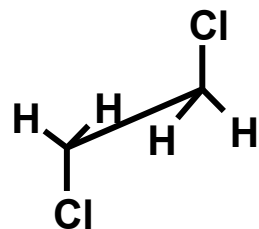
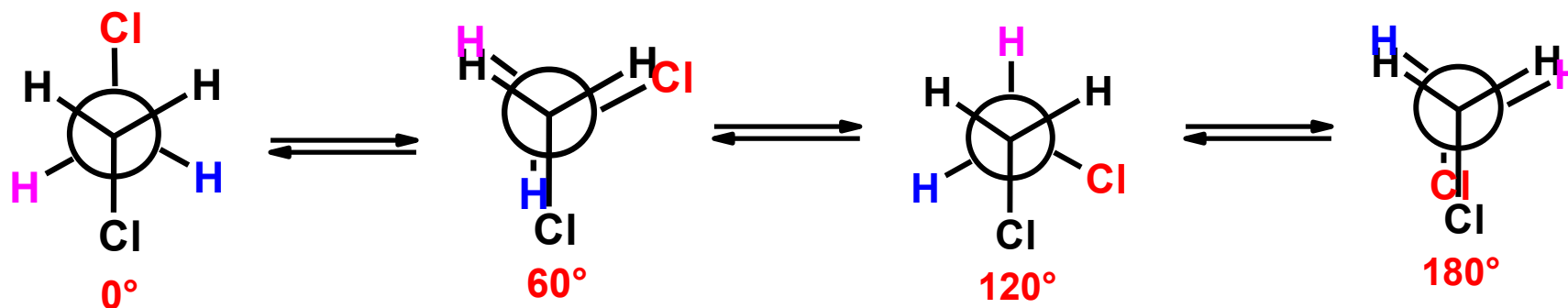
3 Scrivere una qualunque conformazione limite, a scelta

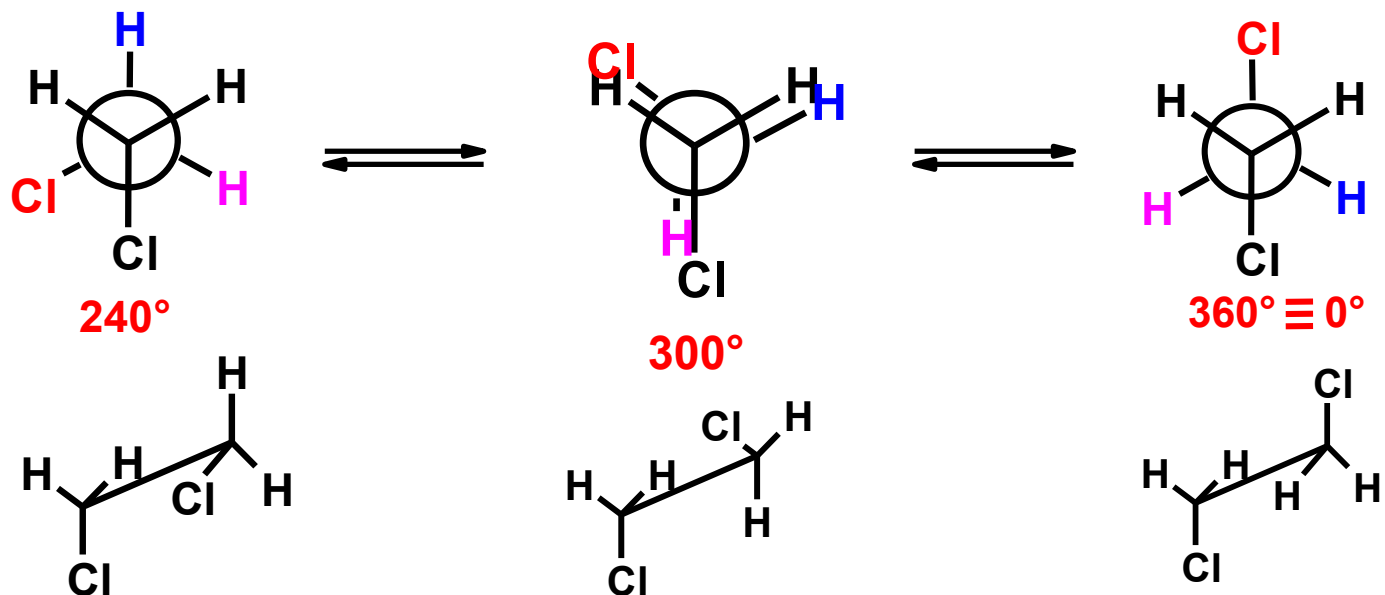


4 Decidere quale C tenere fermo e quale ruotare e scegliere se effettuare la rotazione in senso orario o antiorario



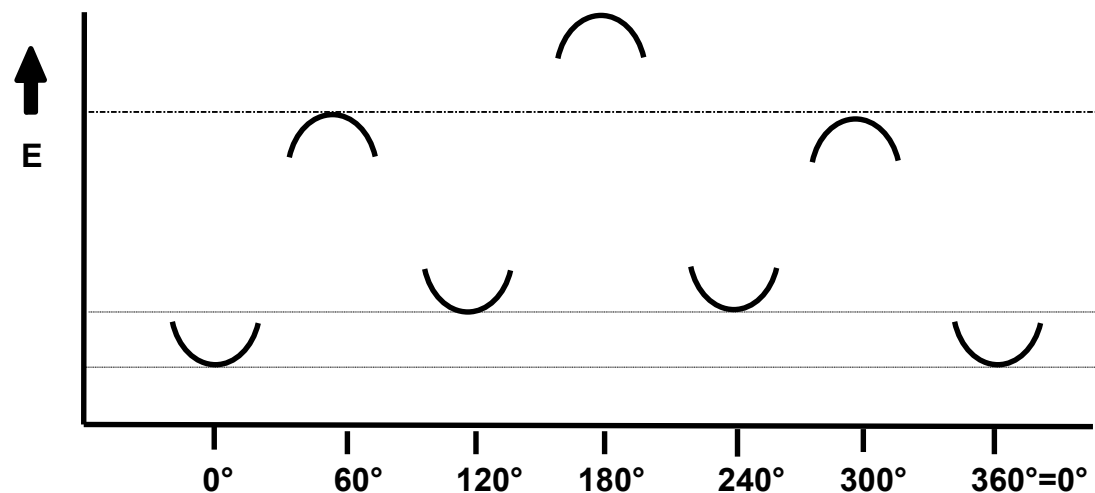
5 Ruotare secondo le scelte fatte, di 60° in 60°, fino a tornare al punto di partenza (360° = 0°)





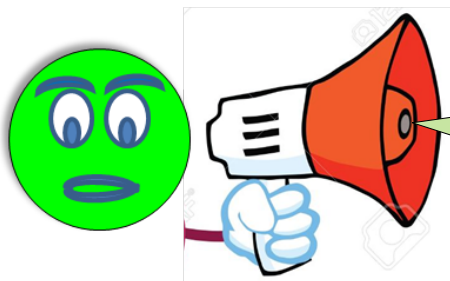
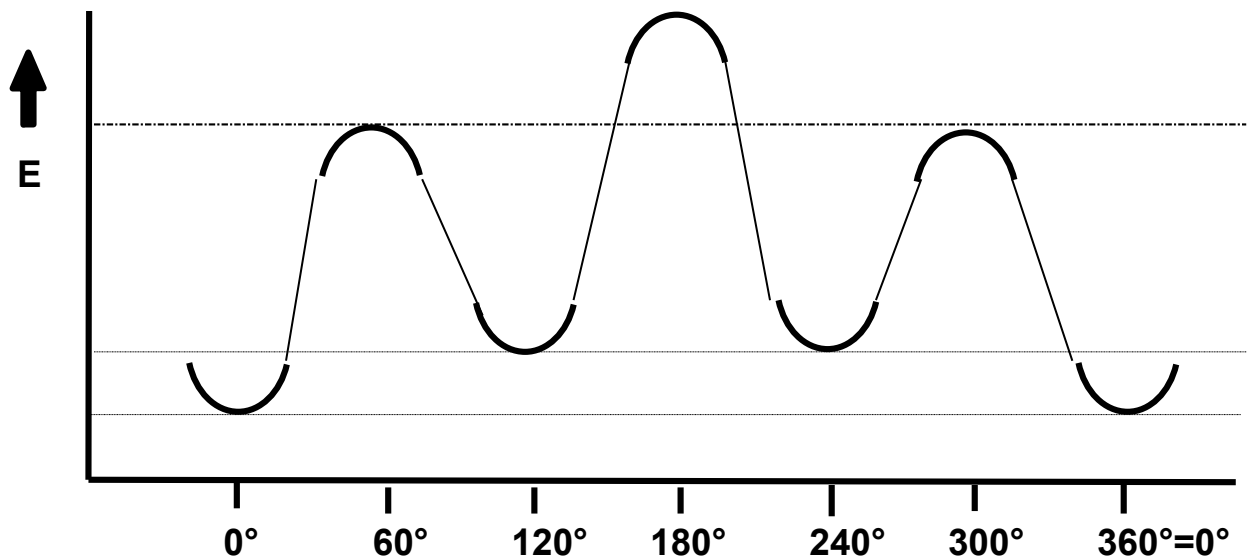
6

Si costruisce il grafico, ricordandosi che le conformazioni **ECLISSATE** si trovano in *massimi* di energia, le conformazioni **ALTERNATE** in *minimi*





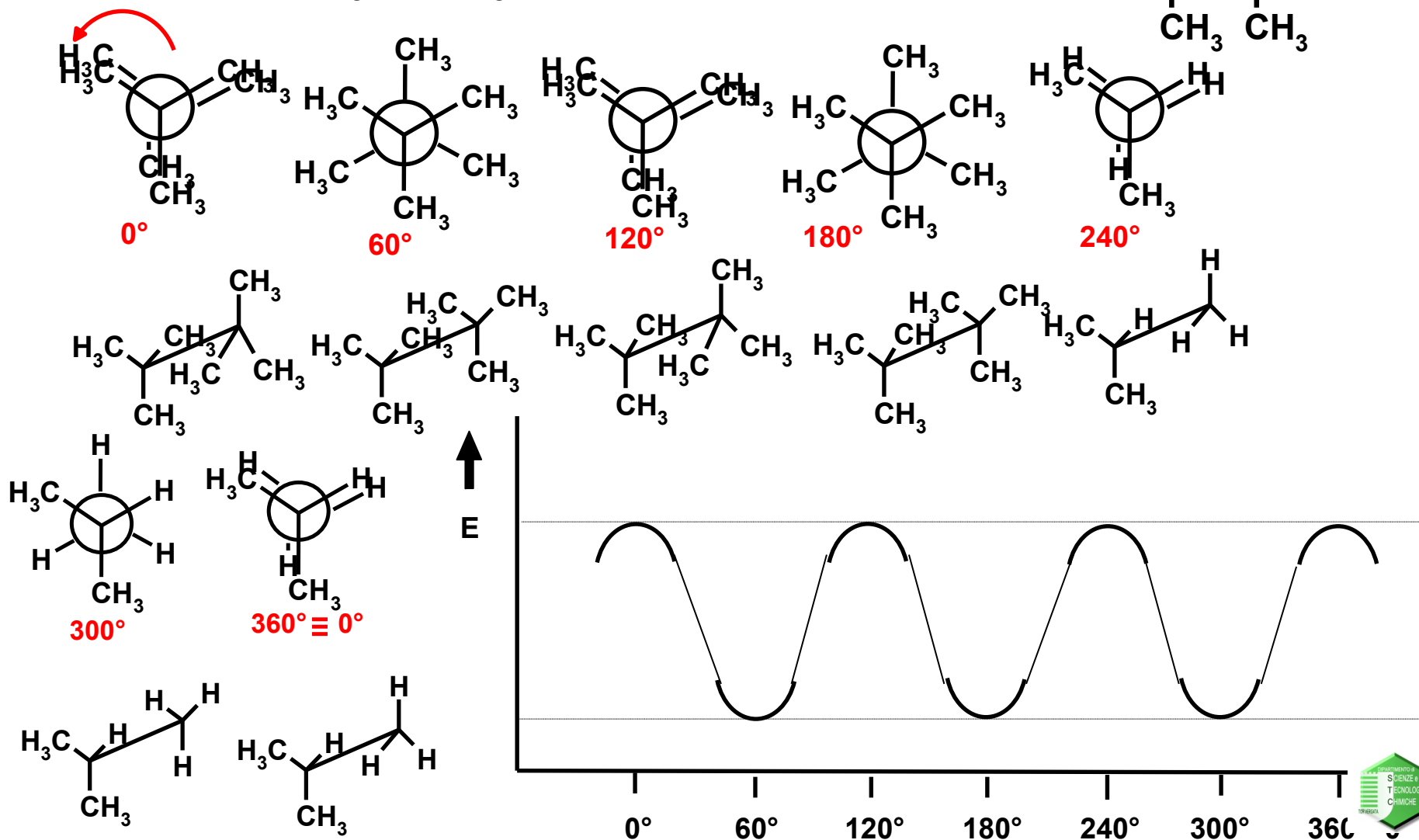
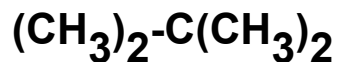
Si collegano con trattini ogni minimo con il massimo successivo



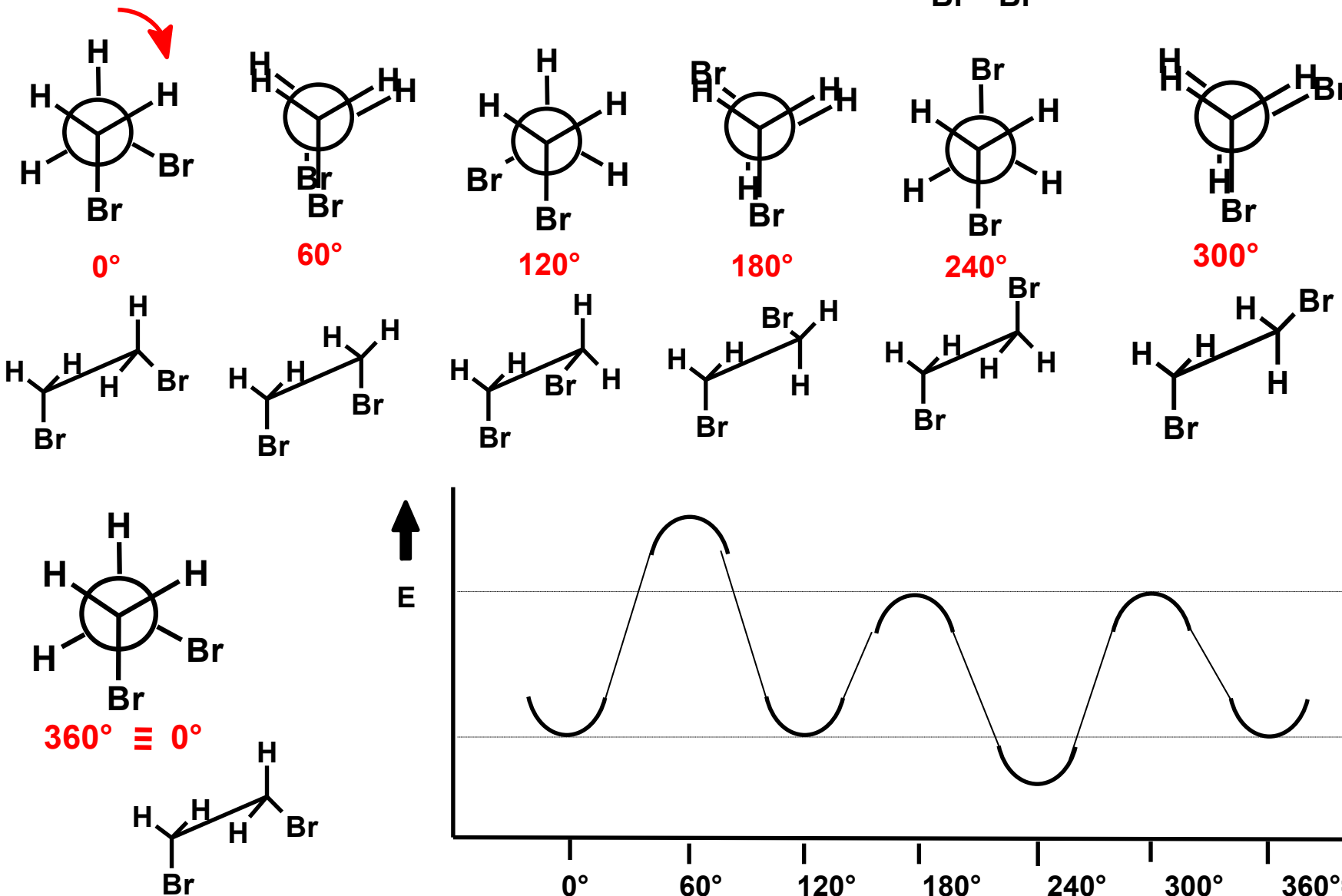
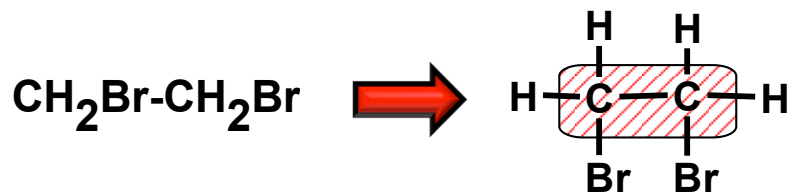
Se siete partiti da una conformazione diversa, l'aspetto del grafico finale può sembrare diverso, ma quello che importa è *quali conformeri sono nei massimi e quali nei minimi e le energie relative*

3. Scrivere i rotameri alternati ed eclissati dei seguenti composti (formule proiettive di Newman e formule a cavalletto):

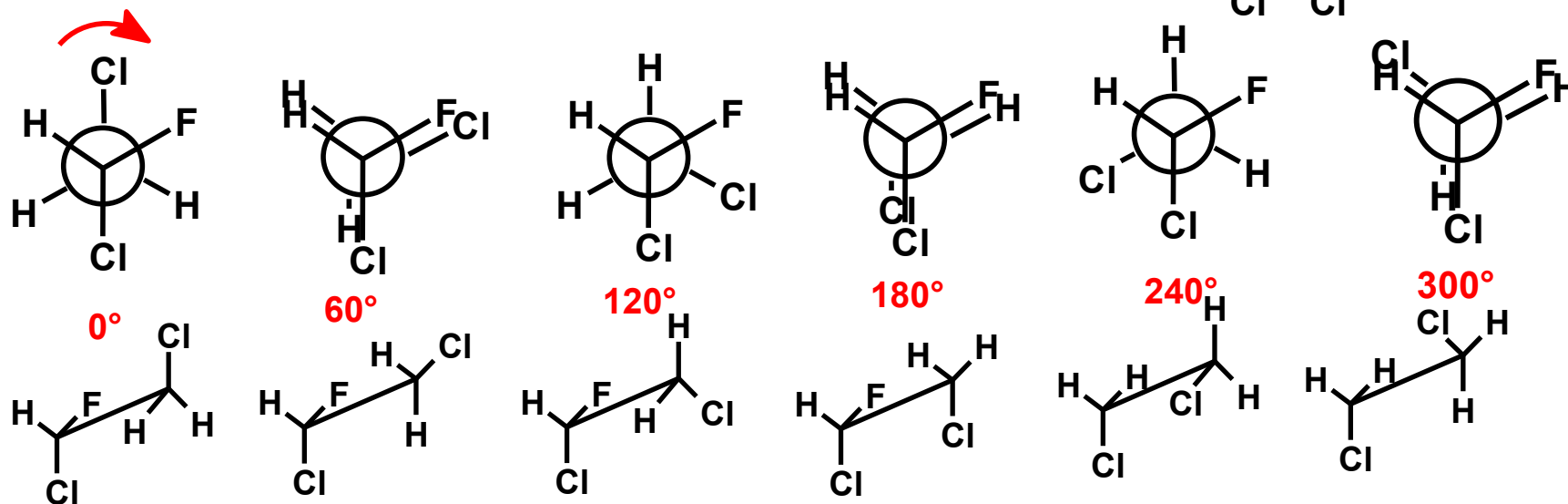
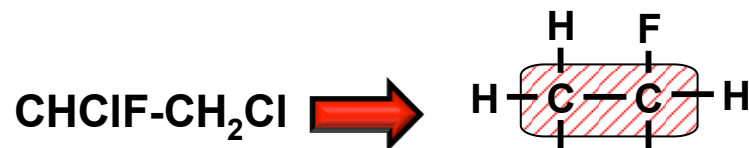
b) tetrametilbutano, rispetto al legame C2-C3



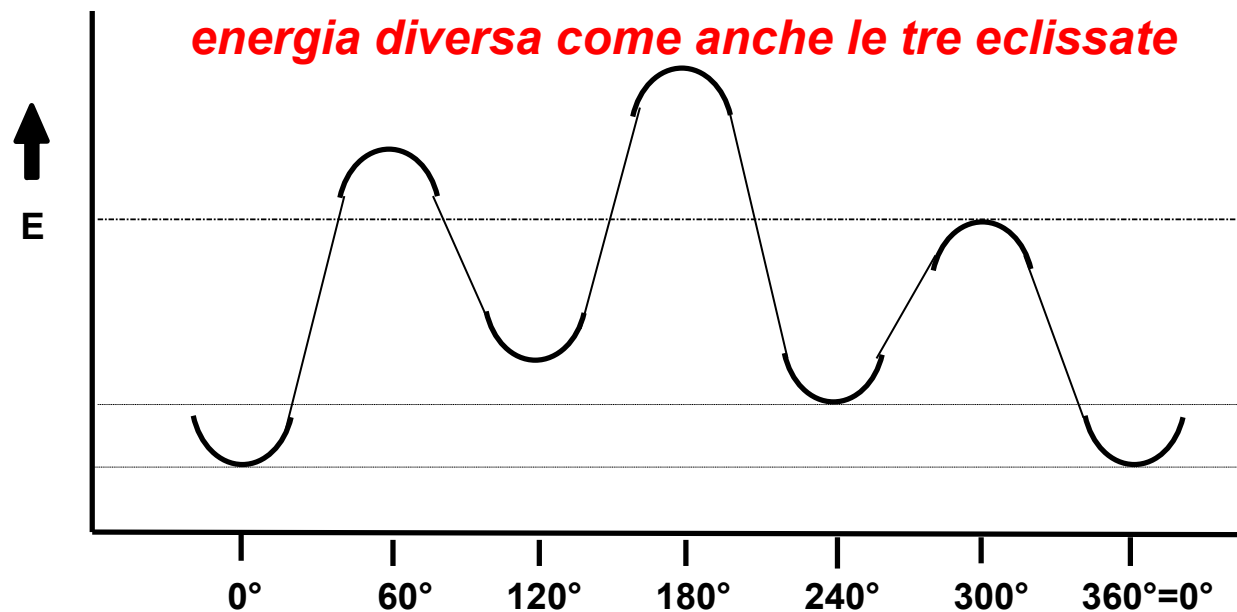
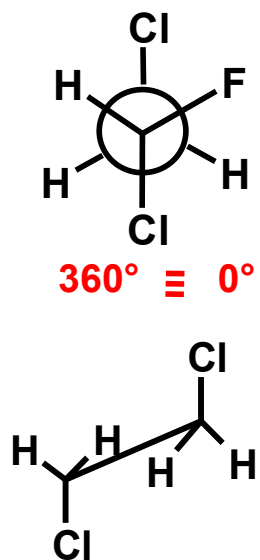
c) 1,2-dibromoetano



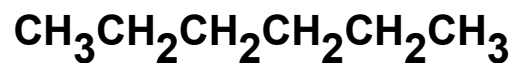
d) 1,2-dicloro-1-fluoroetano



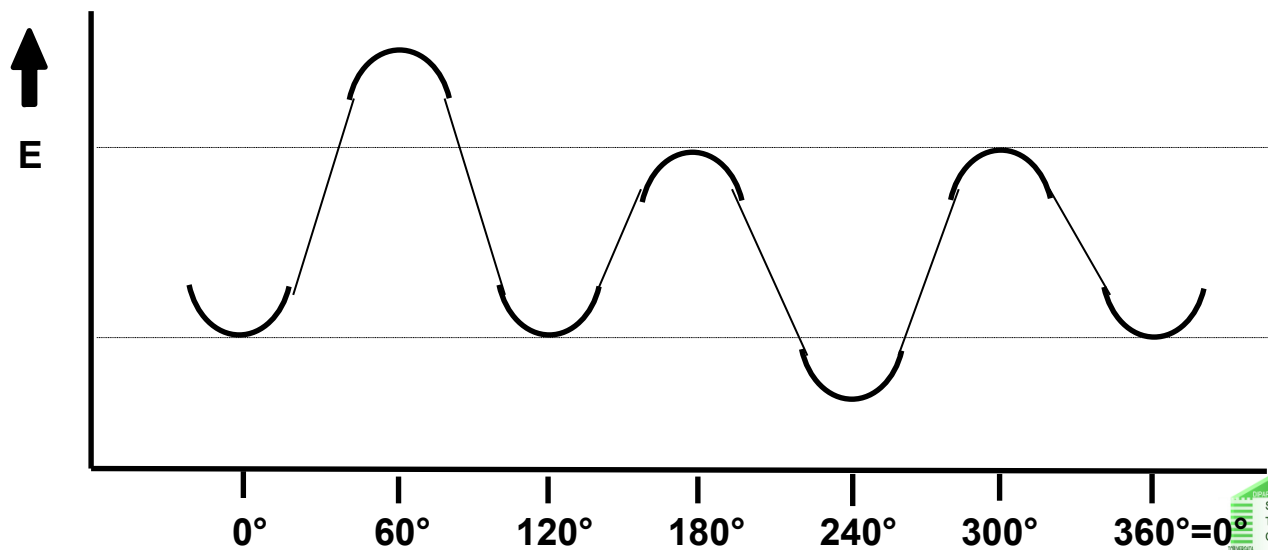
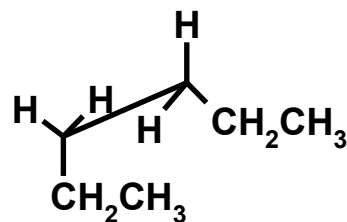
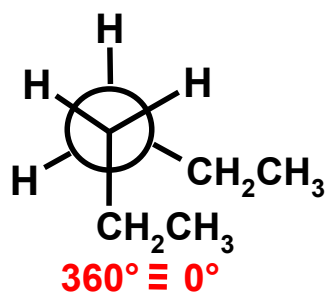
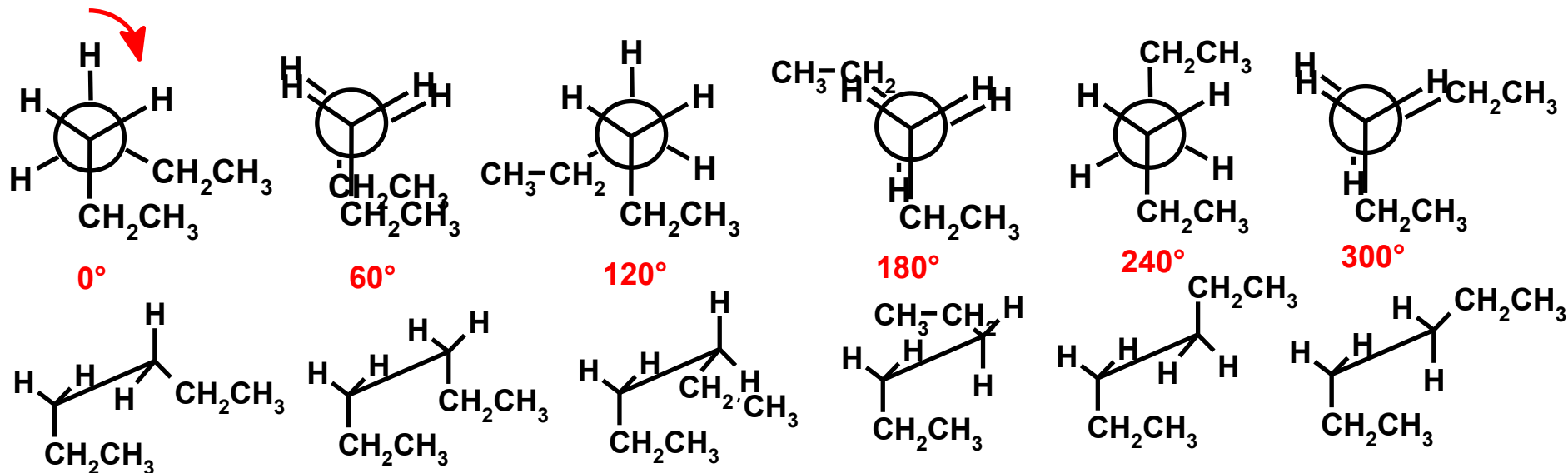
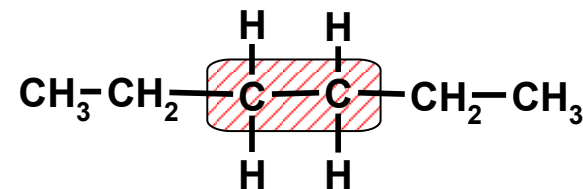
Le tre conformazioni alternate hanno tutte energia diversa come anche le tre eclissate



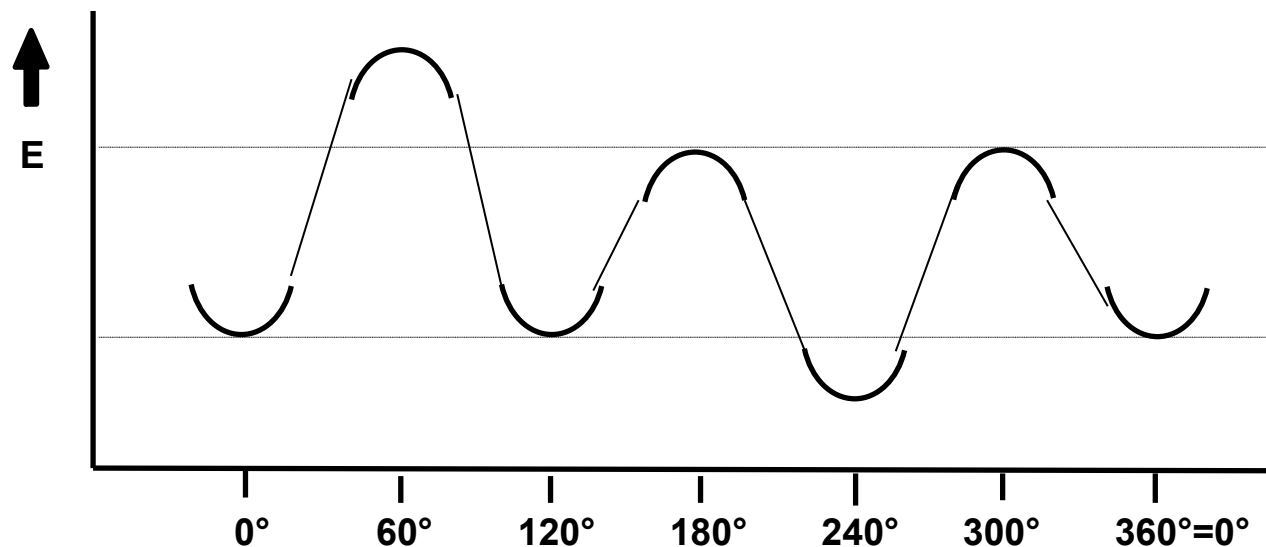
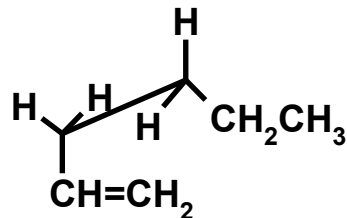
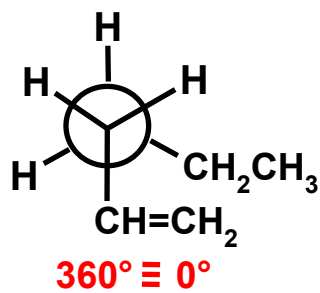
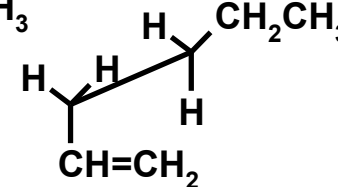
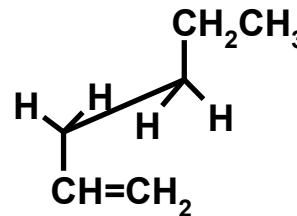
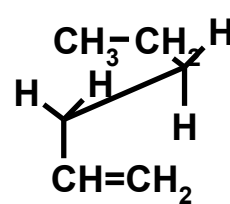
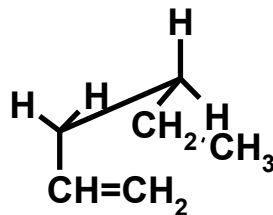
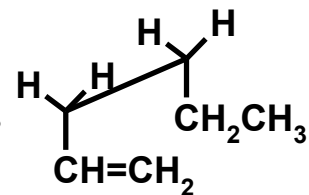
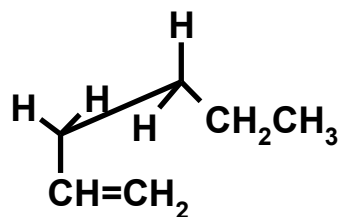
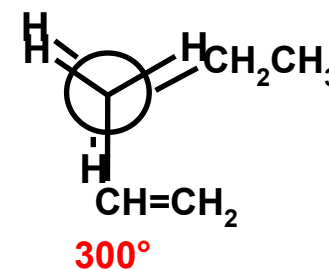
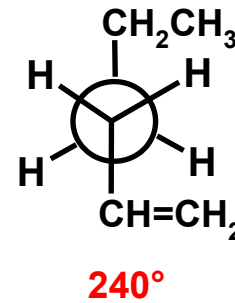
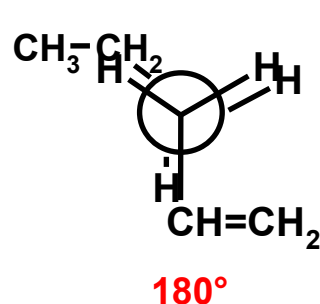
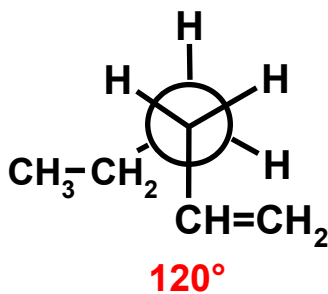
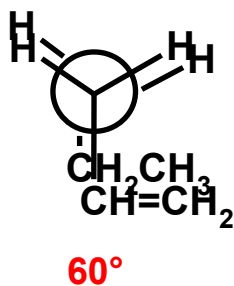
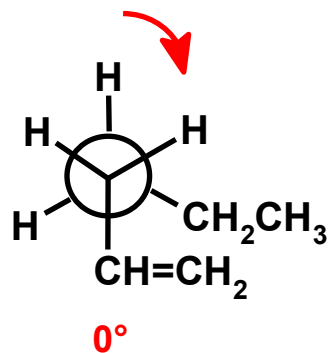
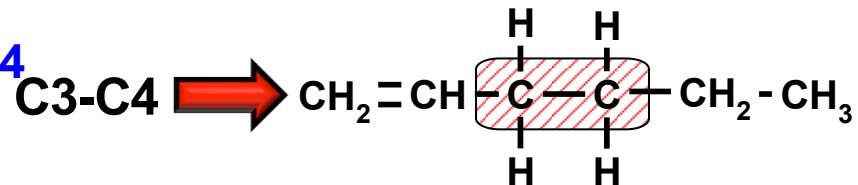
e) esano, rispetto al legame C3-C4



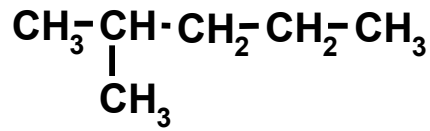
C3-C4 



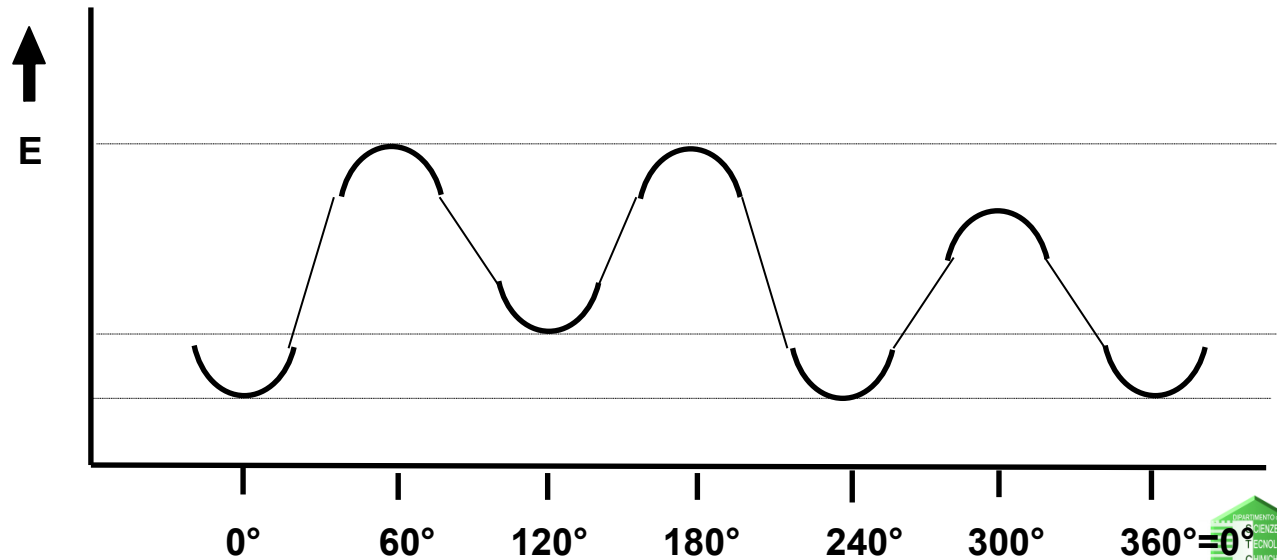
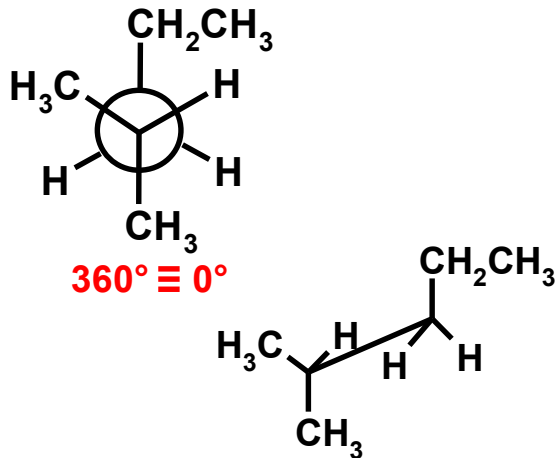
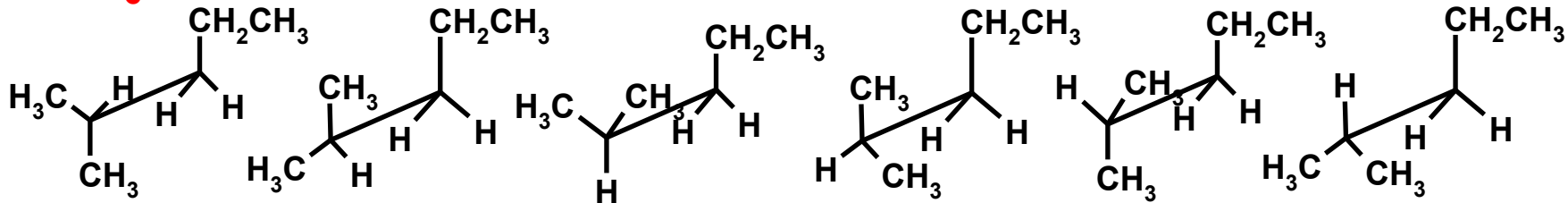
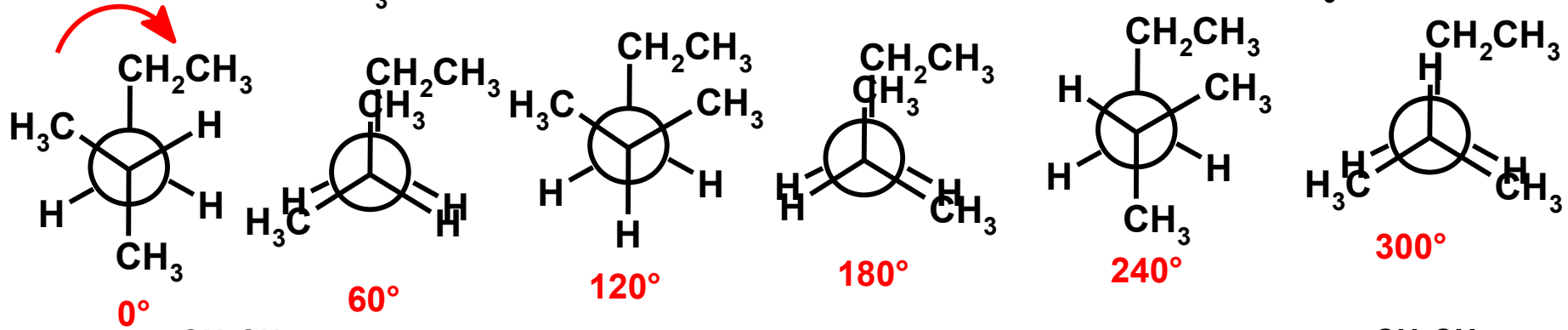
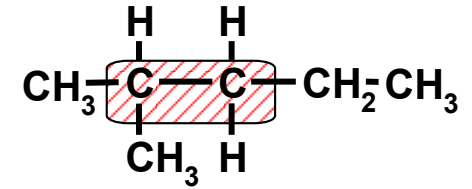
f) 1-esene, rispetto al legame C3-C4



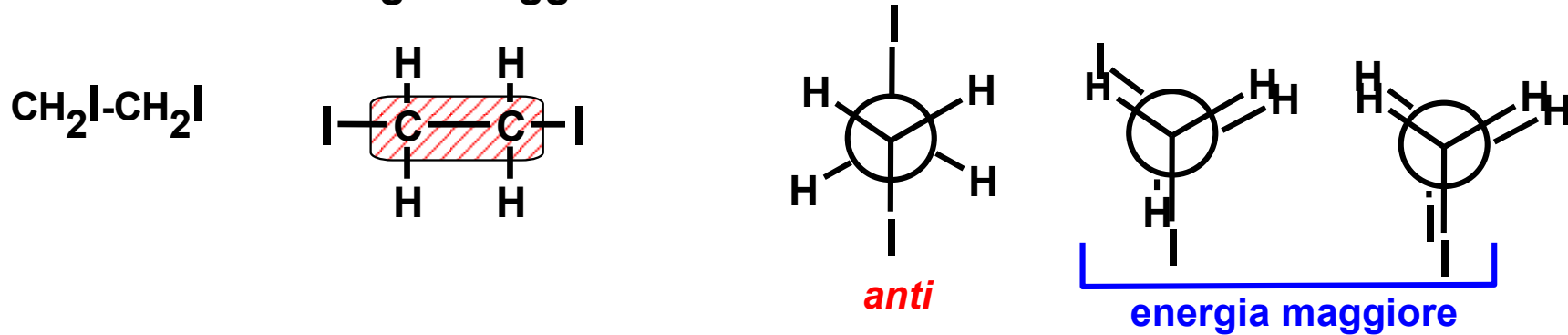
i) 2-metilpentano, rispetto al legame C2-C3



C2-C3



5. Scrivere le proiezioni di Newman della conformazione anti e delle due conformazioni eclissate dell'1,2-diiodoetano. Quale delle due conformazioni eclissate ha energia maggiore?



8. Dire se le posizioni indicate sono assiali o equatoriali.

