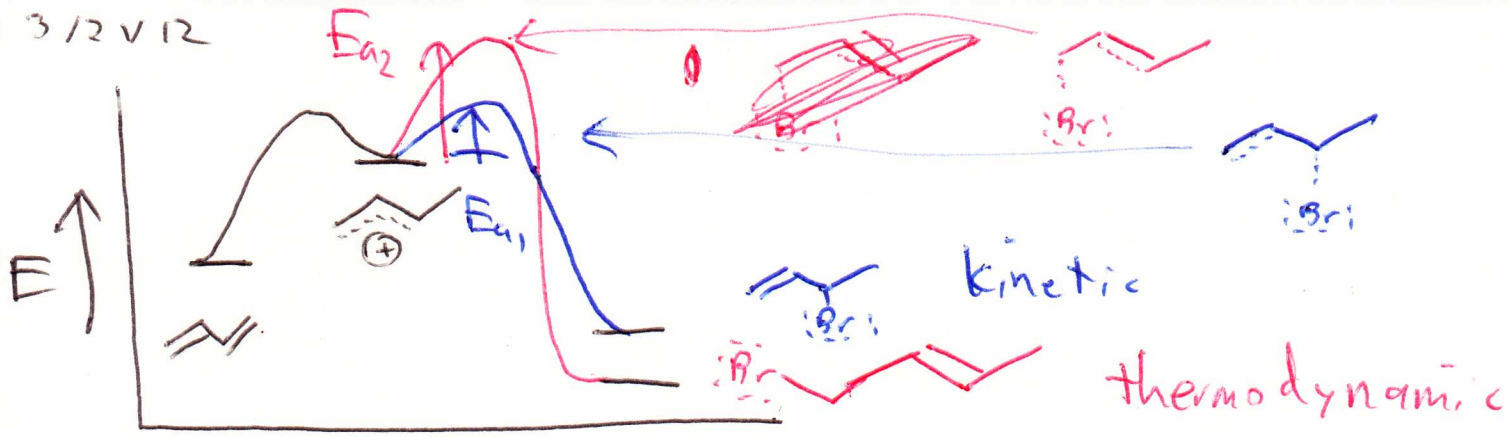
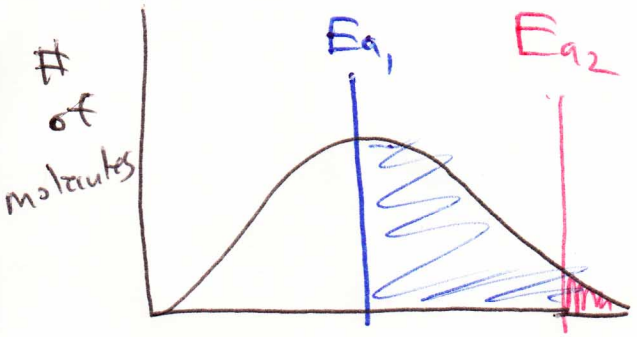
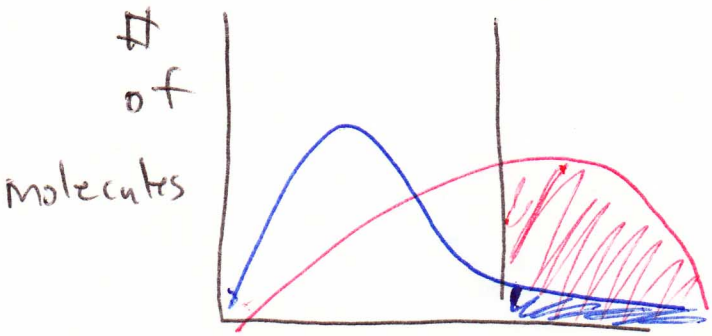
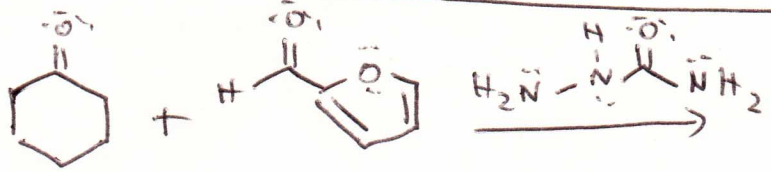


RC



E_a





A B

$A' + B'$

160°C 2020

$A' + B \longrightarrow B' + A$

Only occurs if A' is the kinetic product and can't reverse.

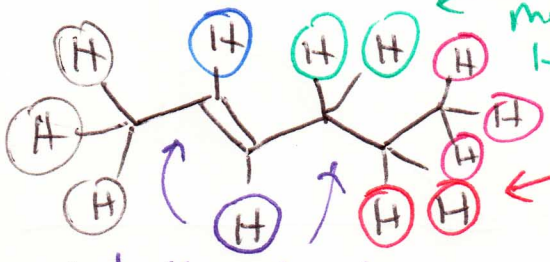
$B' + A \not\longrightarrow A'$

C_6H_{12}

- δ 5.45, (d)(t), 1H, J = 15 Hz
- δ 5.42, (d)(q), 1H, J = 15 Hz
- δ 1.95, (d)(t), 2H
- δ 1.643, (d), 3H
- δ 1.360, (t)(q), 2H
- δ 0.885, (t), 3H

Because D.O.U. = 1 + δ > 5 → alkene → trans (J = 15)

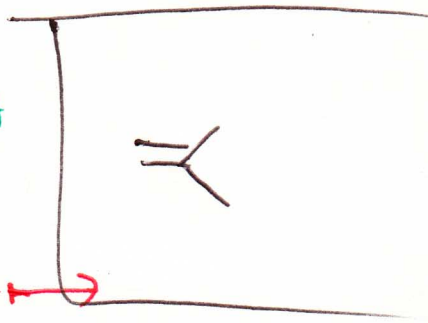
∴ no ring (only one D.O.U.)



must have I = 2, and must be a doublet (at least) due to alkene H

must have I = 2 → must have a quartet → must have methyl neighbor

doublet due to one neighbor; triplet due to the other

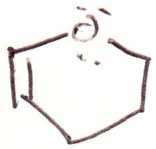


C_5H_8O

2 D.O.U.

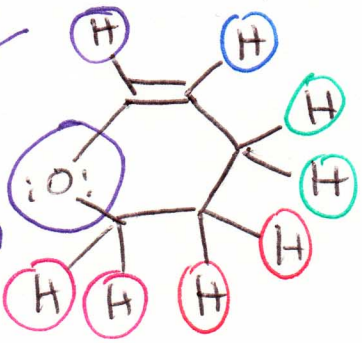
- ~~C=C~~
- ~~C=C, C=C~~
- C=C, C=O
- C=C, ring
- ~~C=O, ring~~
- ~~ring, ring~~

- δ 6.342, (d), 1H, J = 6.2 Hz
- δ 4.664, (d)(t), 1H, J = 6.2 Hz
- δ 3.957, (t), 2H
- δ 1.984, (d)(t), 2H
- δ 1.846, (t)(t), 2H



DHP

Given D.O.U. = 2 and δ > 5 (and there is J info), likely to have an alkene.



Must have a doublet due to single alkene H on neighbor

Since only a doublet occurs, this neighbor cannot have any H. ⇒ C=O or O

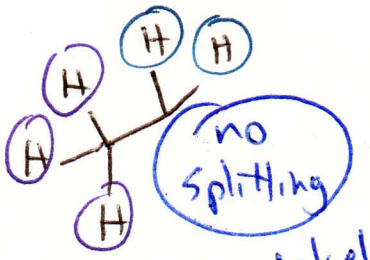
C_5H_8O

- δ 6.34, (d)(d), 1H, J_1 = 8.7 Hz, J_2 = 17.5 Hz
- δ 6.23, (d)(d), 1H, J_1 = 3.3 Hz, J_2 = 17.5 Hz — trans
- δ 5.811, (d)(d), 1H, J_1 = 3.3 Hz, J_2 = 8.7 Hz
- δ 2.616, (q), 2H
- δ 1.112, (t), 3H

geminal

cis

trans



most likely
O or C=O