

EAS (continued)

Friedel-Crafts Alkylation and Acylation

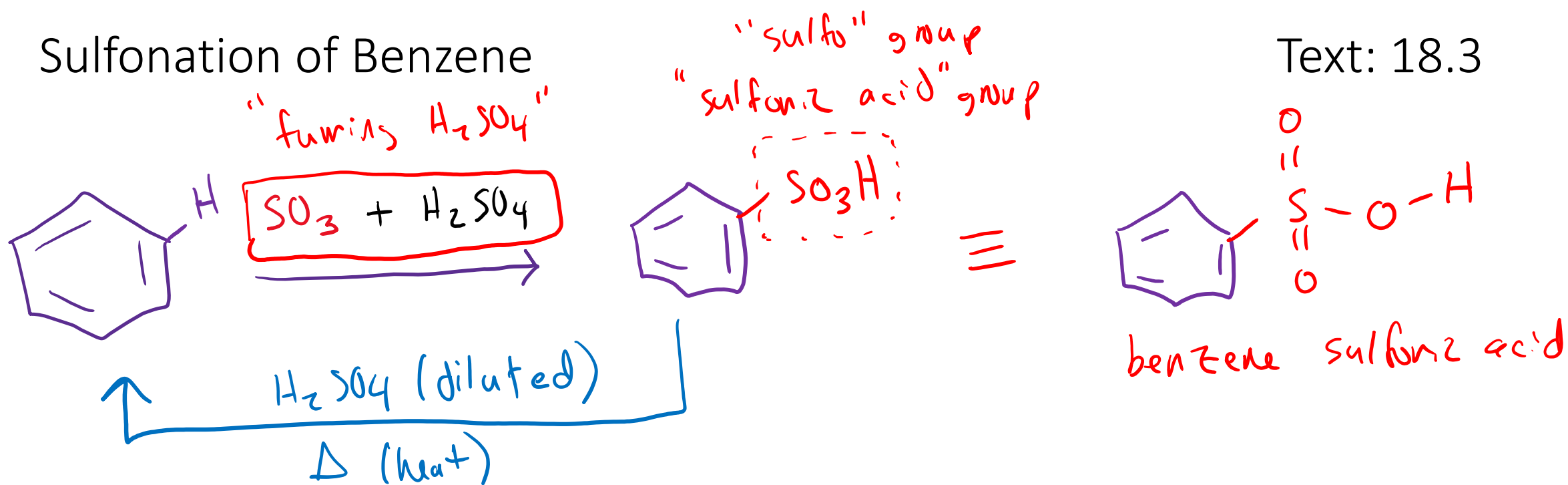
1/20/2023

TA hours (on moodle later today) - TW R

Org I review problems (on Moodle)

HW on moodle (later today)

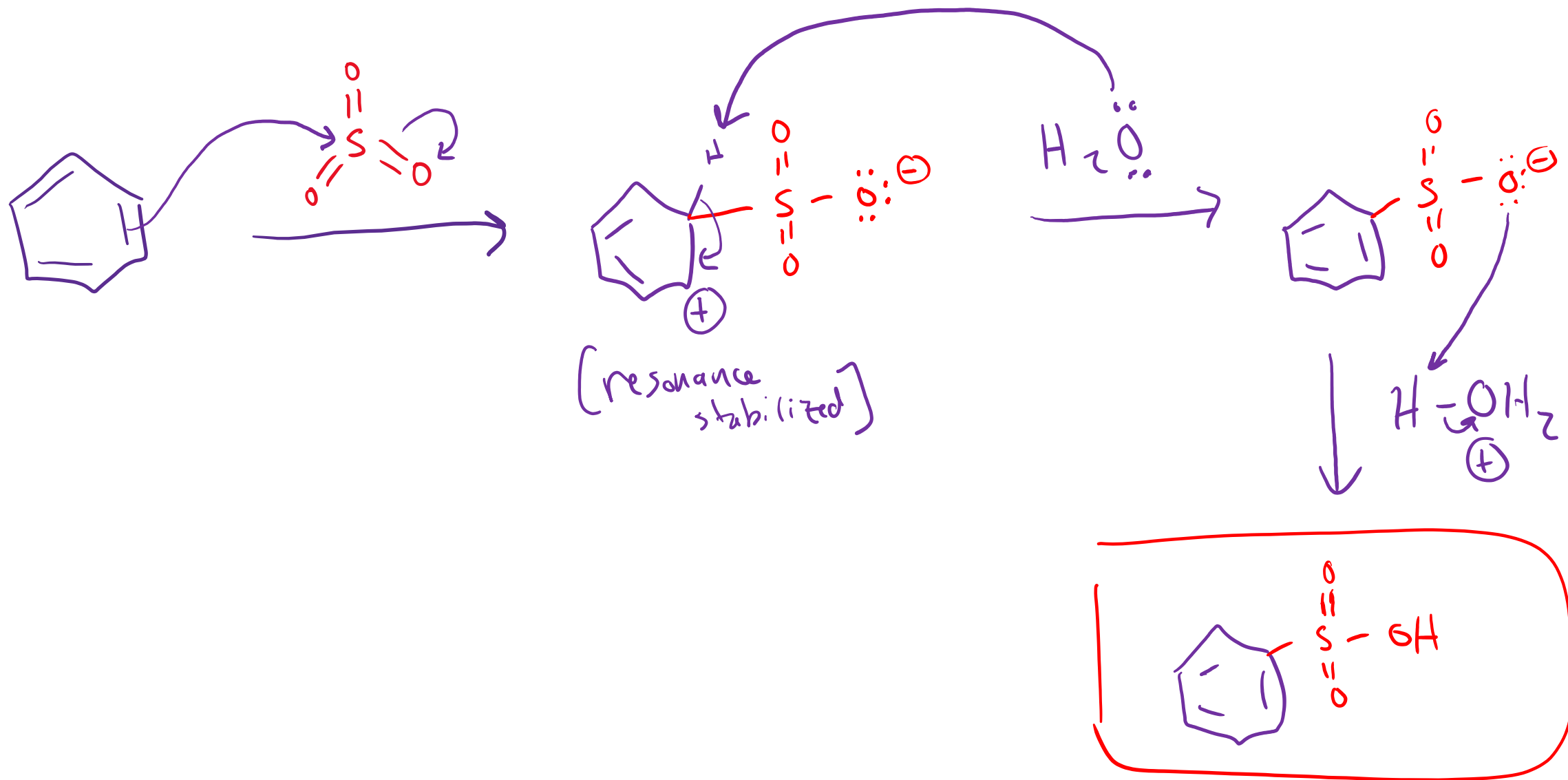
Sulfonation of Benzene



note: sulfonation is reversible

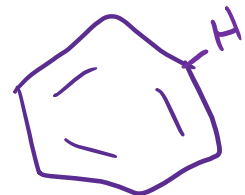
Sulfonation of Benzene: Mechanism

Text: 18.3

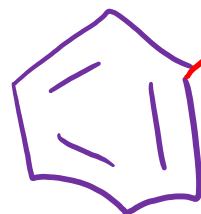
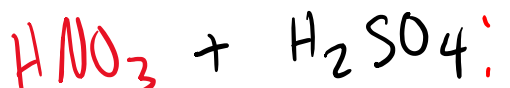


Nitration of Benzene

Text: 18.4



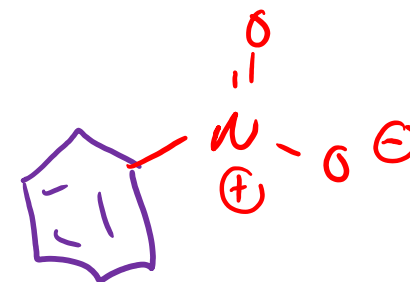
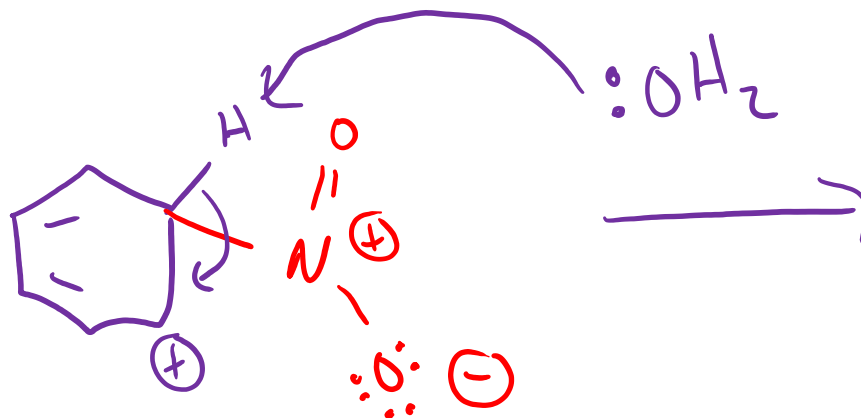
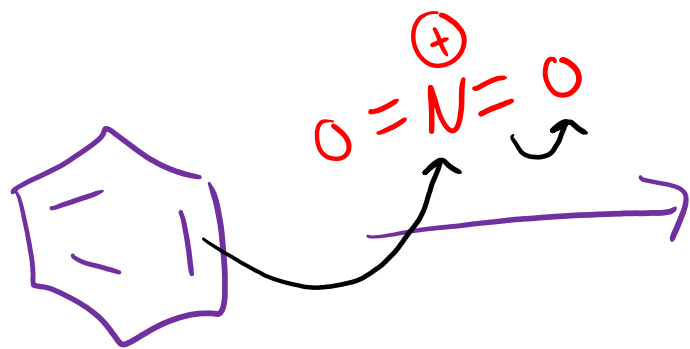
generate NO_2



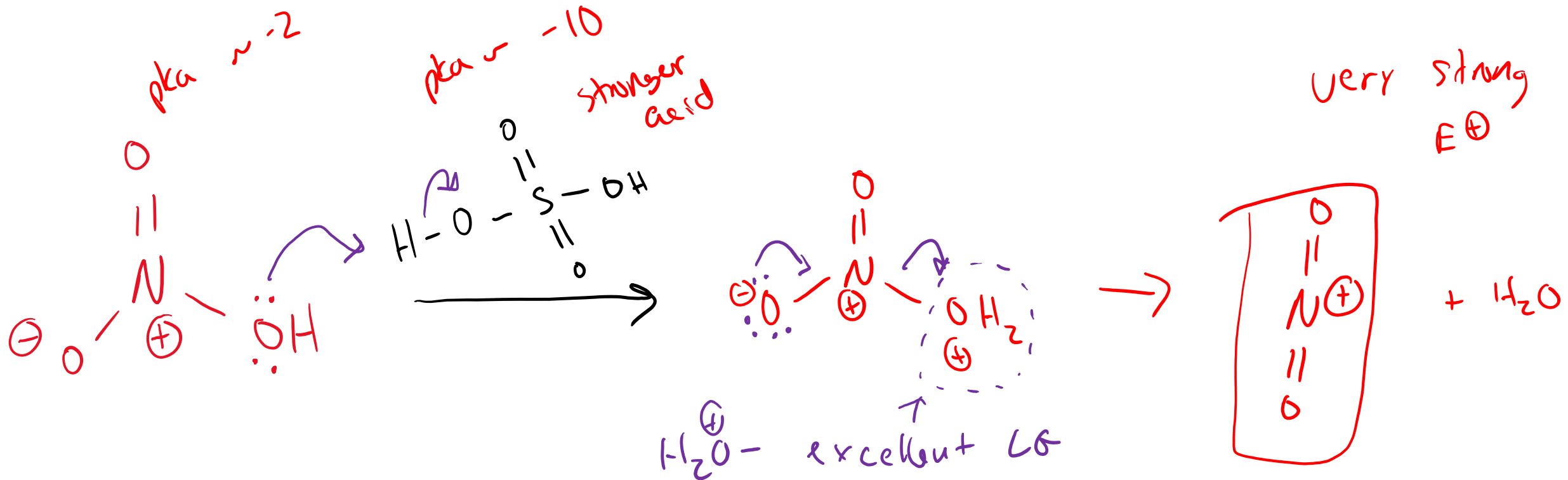
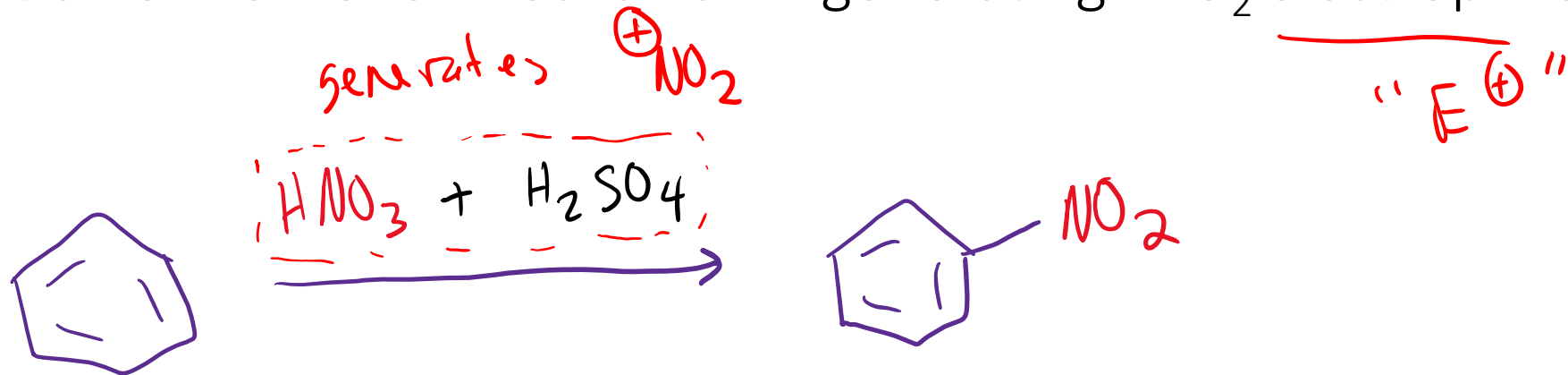
"nitro" group



mechanism

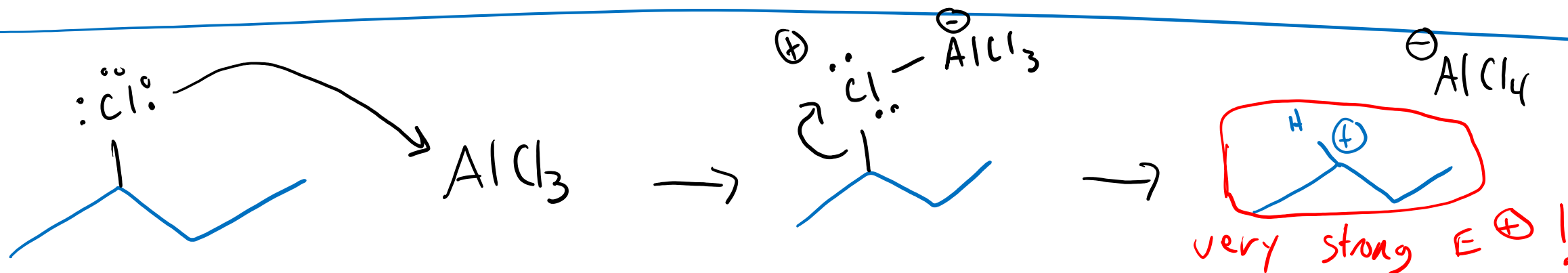
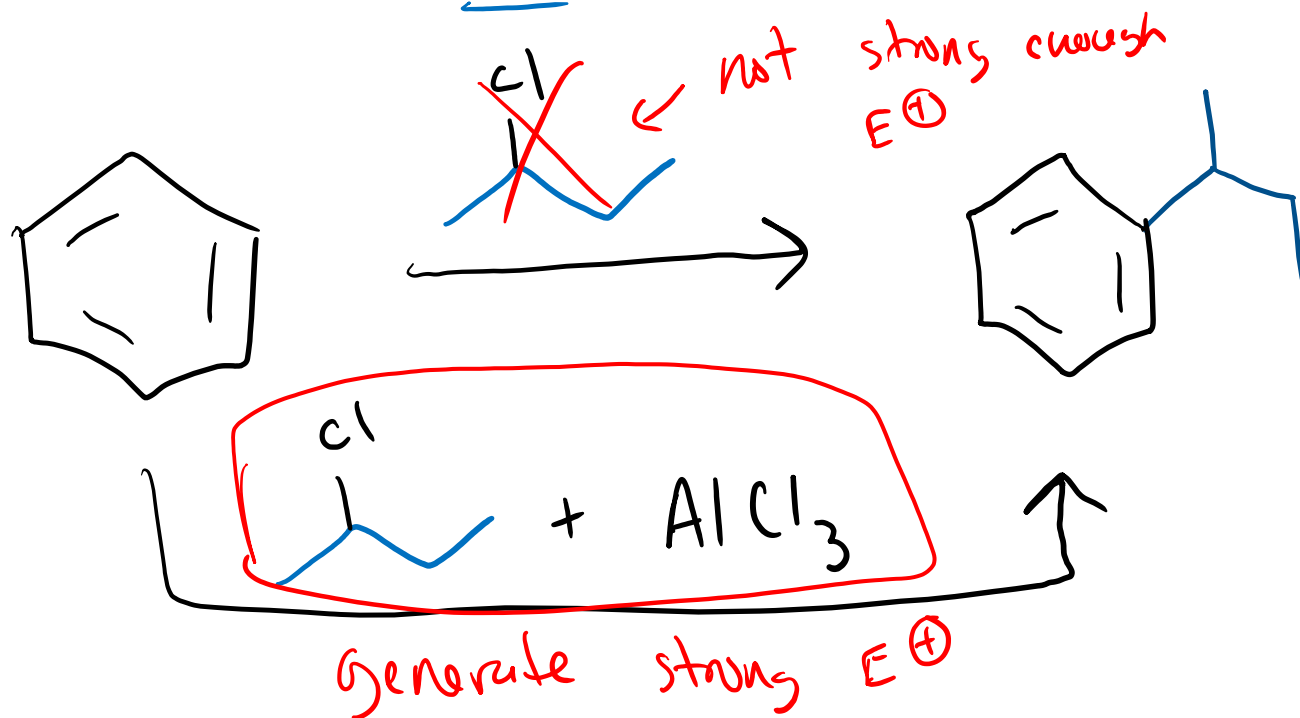


Nitration of Benzene: mechanism - generating NO_2^+ electrophile

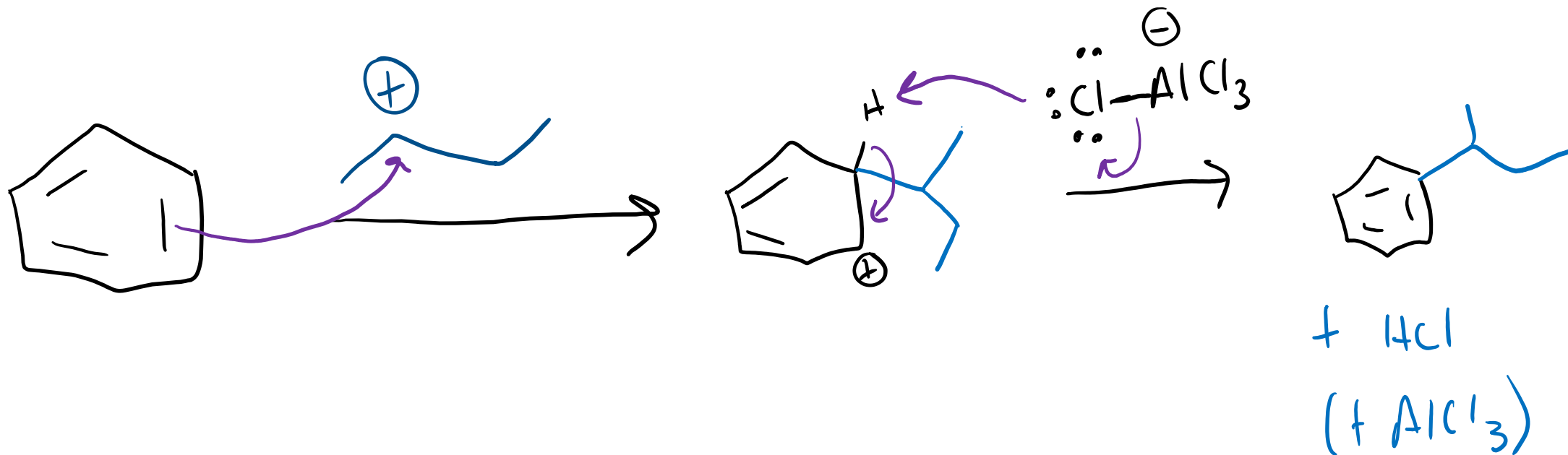


Friedel-Crafts Alkylation — adding an alkyl group via EAS

Text: 18.5

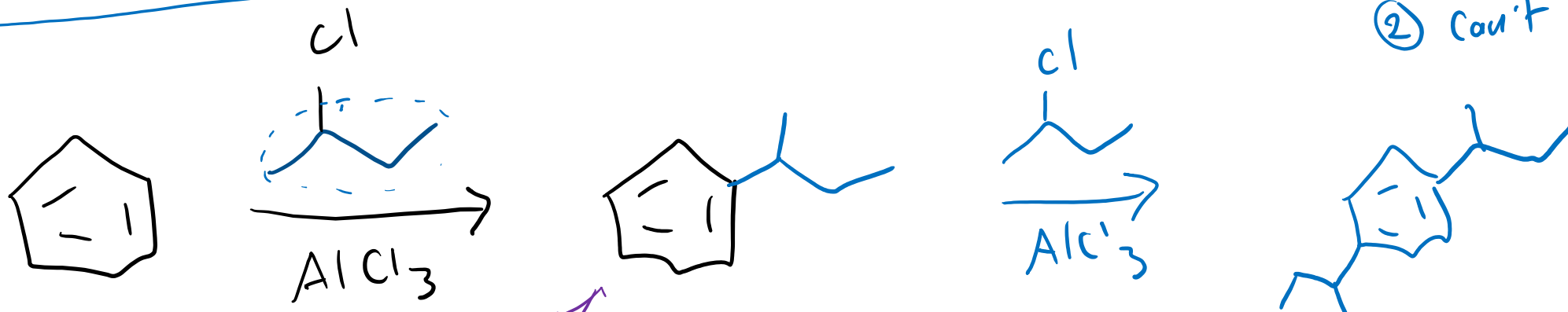
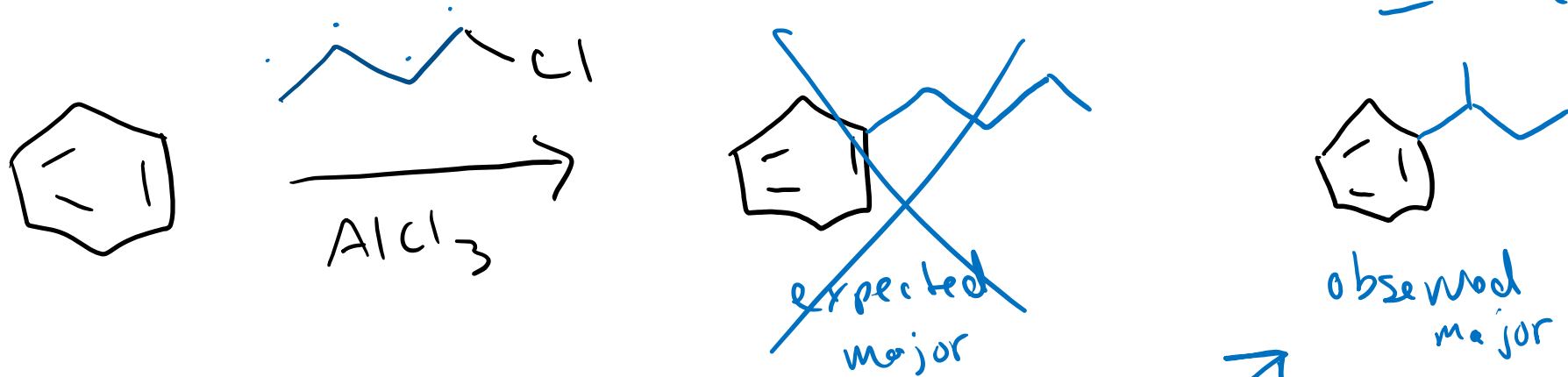


Friedel-Crafts Alkylation: Mechanism



Friedel-Crafts Alkylation: Limitations

① C^+ shifts can + will occur!
(1° alkyl halide no good!)



② Can't stop at just one alkylation!

more reactive than benzene!

Friedel-Crafts Acylation

(still EAS)

Text: 18.6

