Homework Week 6

Concepts--Chapter 6: Reaction mechanism, intermediate, transition state, activation energy, rate (Arrhenius equation), reaction coordinate diagram, Hammond postulate, electrophilic addition, carbocation stability (hyperconjugation & inductive effect) and rearrangement, Markovnikov addition, anti and syn addition, oxidation, reduction, heat of hydrogenation, alkene stability

Reactions--learn mechanisms!!
- Addition of HX (Markovnikov)
- Hydration -H⁺ catalyzed (Markovnikov, 3° carbocations only)
- Oxymercuration/Reduction (Markovnikov)
- Hydroboration/Oxidation (anti-Markovnikov)
- Halogenation (X₂, anti-addition)
- Hydrohalogenation (anti-addition)
- Oxidation -OsO₄ (syn addition)
- Ozonolysis/Reduction (cleavage)
- Reduction H₂/catalyst (syn addition)

Skills: Predict products from reactions with alkenes, including stereochemistry & optical activity
- Write reaction mechanisms, including carbocation rearrangements
- Draw reaction coordinate diagrams consistent with reaction mechanisms
- Understand the distinction between reaction rate and thermodynamic favorability
- Predict relative stability of alkenes, calculate from heats of hydrogenation
- Plan syntheses of alcohols, alkyl halides, alkanes, aldehydes & ketones, starting from alkenes

Monday
- Read through section 6.4 (if you haven't finished already)
- Problems Chapter 6: 2-4, 17, 18

Tuesday
- Finish reading Chapter 6
- Problems Chapter 6: 5-9, 19(a-f), 20, 24,

Wednesday
- Study for test

Friday
- Problems Chapter 6.21, 23, 25-29, 30, 32-34