

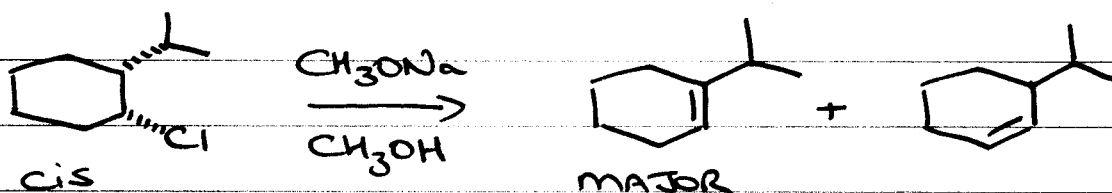
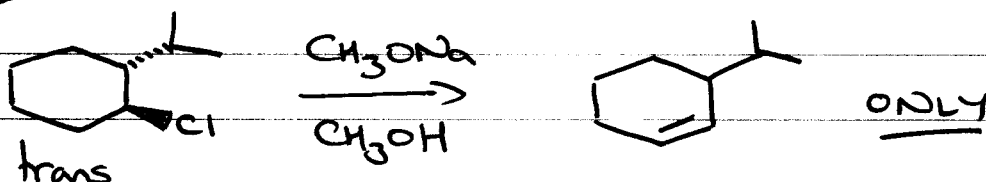
- ① STEREOCHEMISTRY
- ② REGIOSELECTIVITY
- ③ SYN ELIMINATION
- ④ E1 vs E2
- ⑤ SN vs E

REVIEW Ch 9

PROBLEMS 9.43-9.53

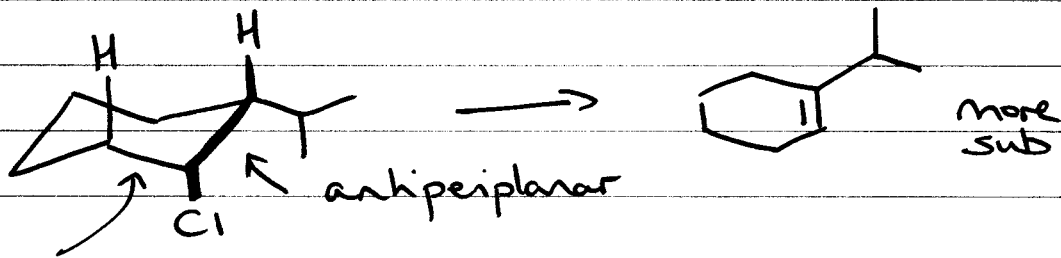
except 9.47g,h

## ① STEREOCHEMISTRY cont...

BUT

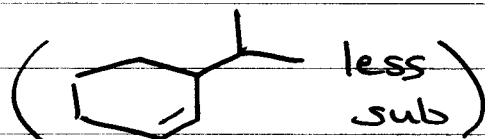
also, cis reaction FASTER than trans - WHY?

-cis



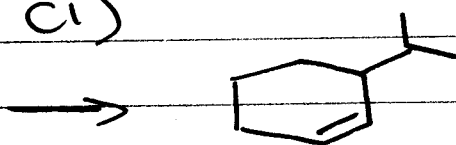
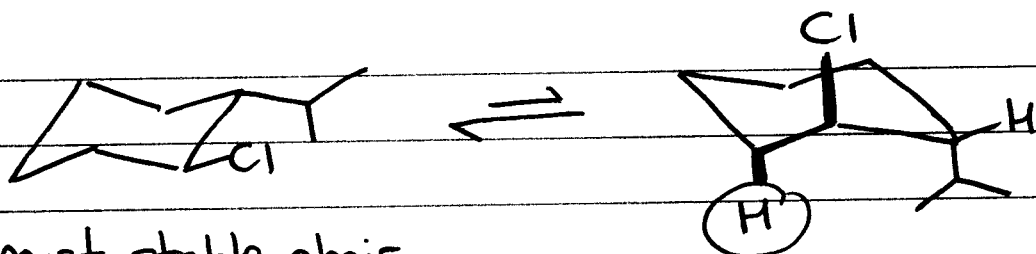
also

antiperiplanar



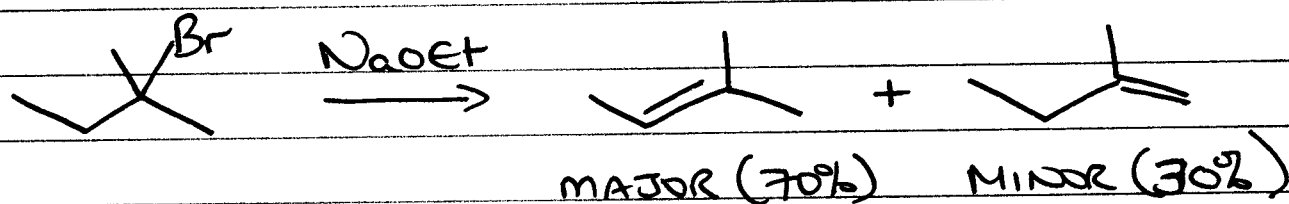
2

- trans

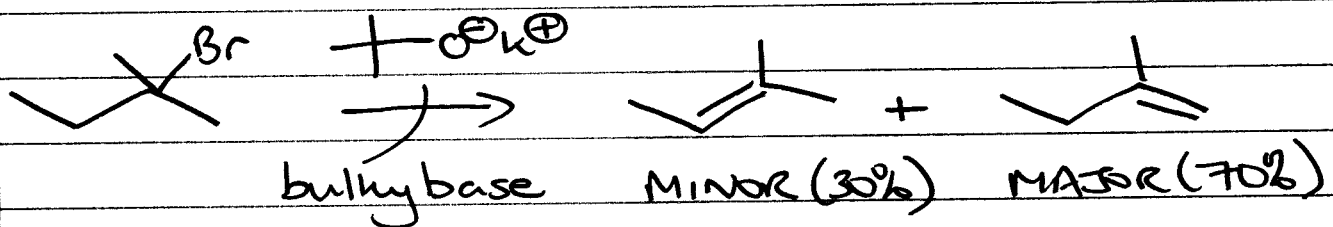


slower because reacts through less stable chair

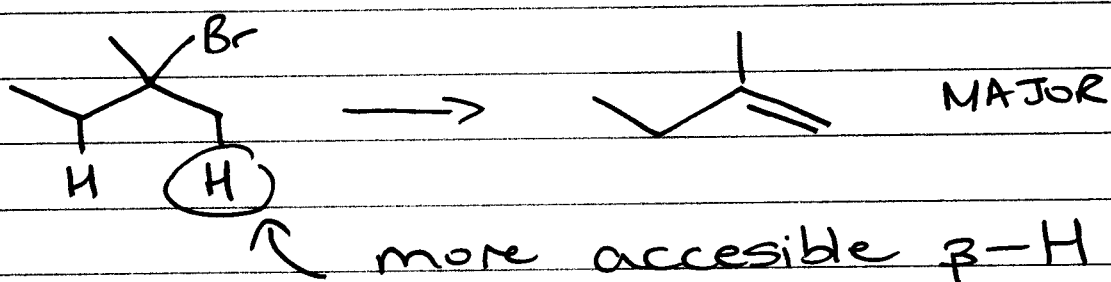
## 2) REGIOSELECTIVITY



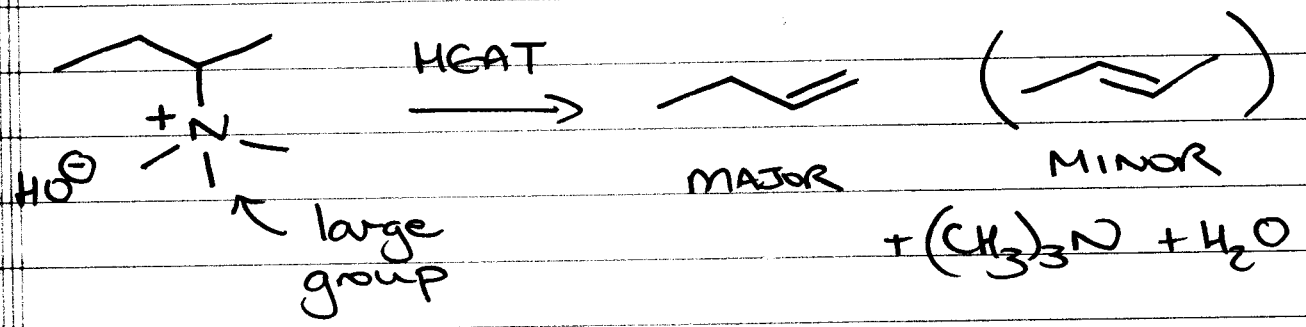
ZAITSEV SELECTIVITY → more sub, more stable alkene



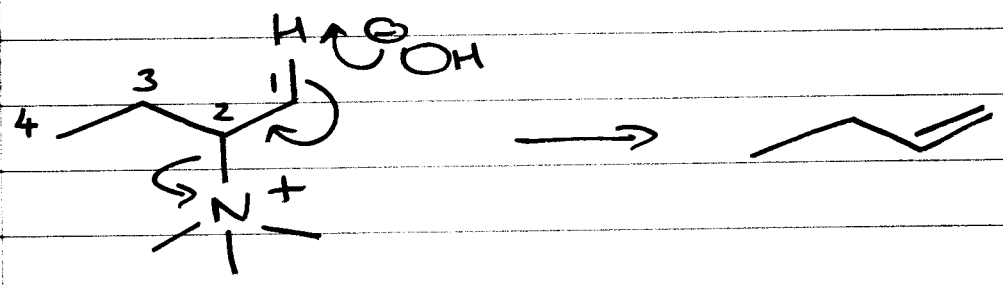
HOFMANN SELECTIVITY → least sub alkene preferred



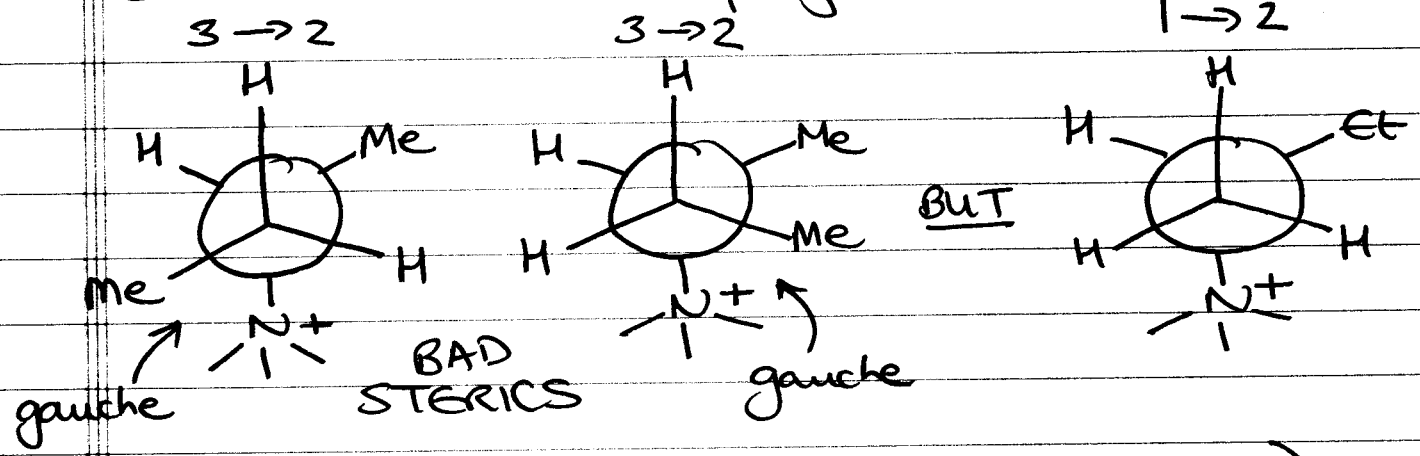
### Common reaction w/ QUATERNARY AMMONIUM SALTS



PROCEEDS w/ ANTISTEREOSPECIFICITY

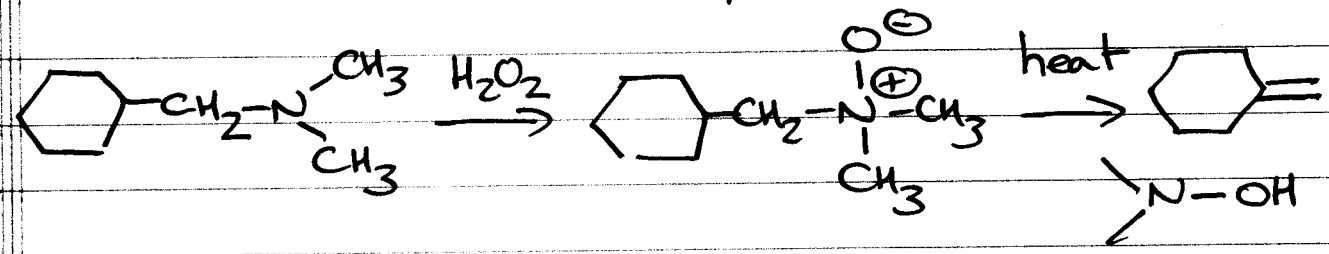


consider NEWMAN projections

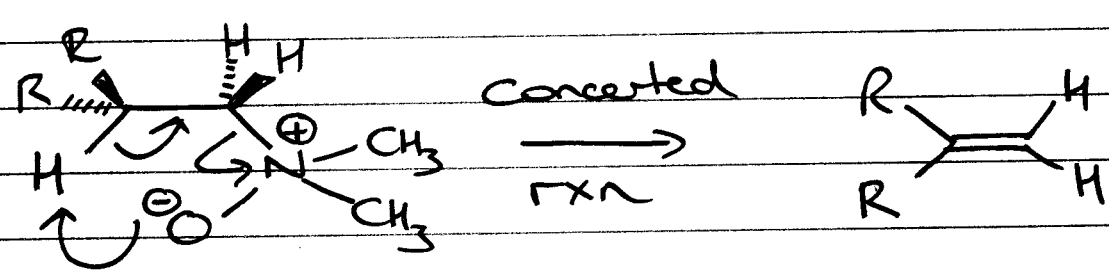


(also electronic effects.... don't worry)

### ③ SYN ELIMINATION (cope elimination)

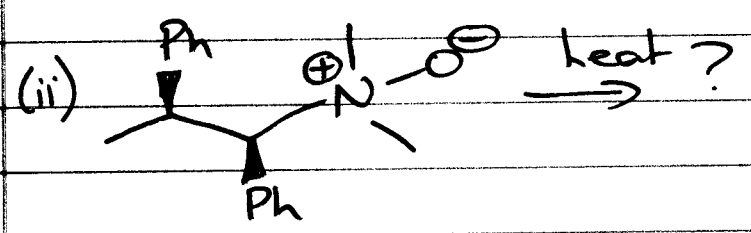
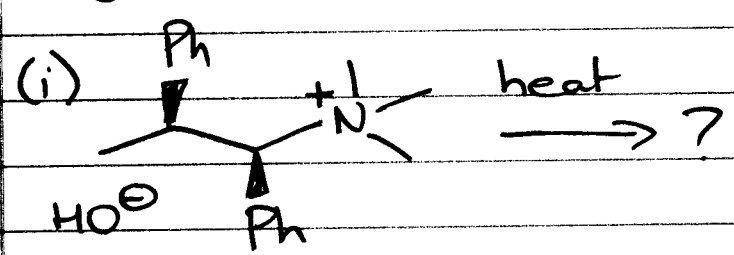


mechanism



SYN

Figure out the products of these reactions

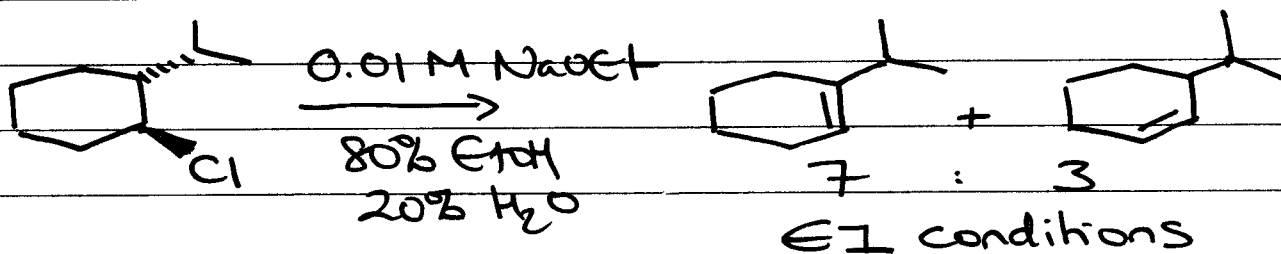
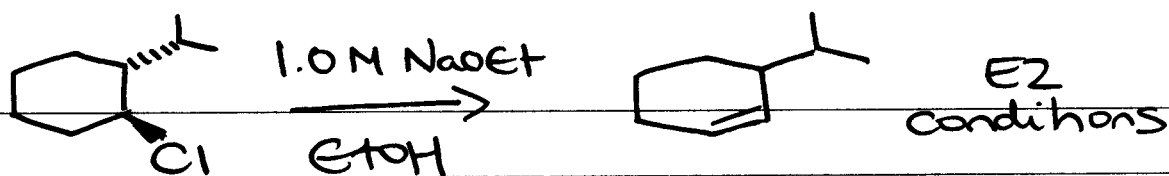


④ E1 vs E2

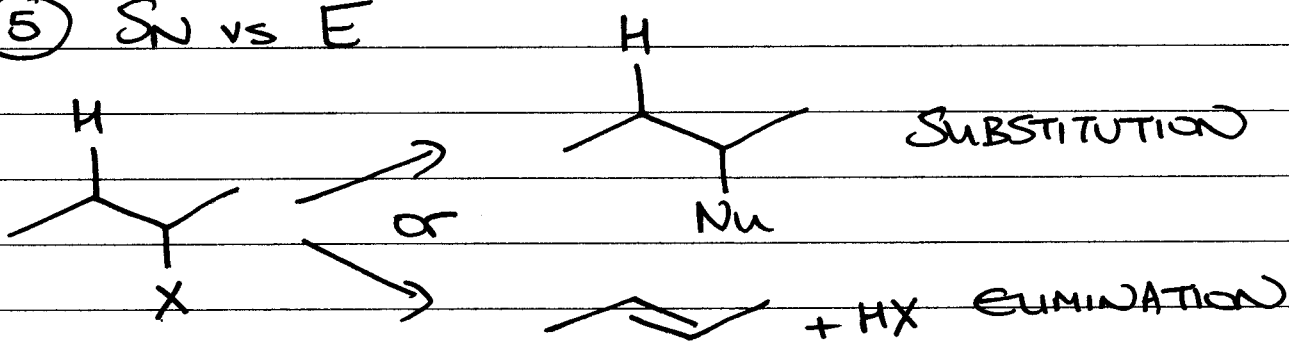
ALKYL HALIDE	E1	E2
methyl	-ELIMINATION IMPOSSIBLE-	
1° (RCH <sub>2</sub> X)	DOES NOT HAPPEN (1°C+)	FAVORED ELIMINATION MODE
2° (R <sub>2</sub> CHX)	H <sub>2</sub> O/ROH (weak bases) ALIPHATIC/BENZYLIC	STRONG BASES (RO <sup>-</sup> /HO <sup>-</sup> )
3° (R <sub>3</sub> CX)	WEAK BASES	STRONG BASES

can also depend upon reaction conditions

5

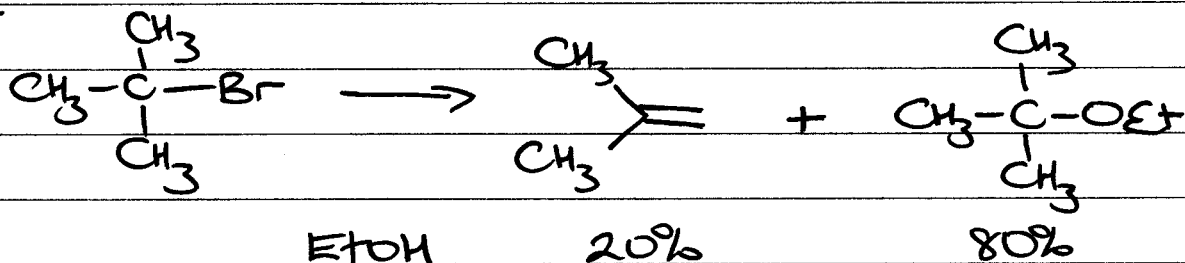


5)  $S_N$  vs E



(i)  $S_N1$  vs E1

e.g.



affinity for proton vs carbon  $\Rightarrow$  stronger base

EtOH/EtONa  $\leftarrow$  90%  $\rightarrow$  E2 mechanism 10%

Generally  $S_N1$  is favored over E1 except at higher temperatures (more later)