should be #6

1. (2 points) Assign Z or E nomenclature to the alkenes shown below

1 point
each

① OMe
② ②
Br ①
OH

E

(opposite - entpepan)

CH₃ ②
② Cl ①
① CH₃

Z
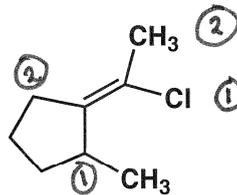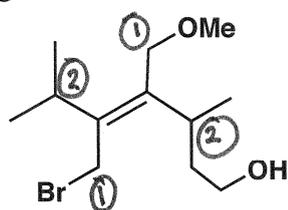
(same - zusammen)

Remember 1
high priority
atom takes
priority over any
number of
lower priority

2. (4 points) Propose a detailed stepwise mechanism for the reaction shown below

1 point
for each
step
*

H_2SO_4/heat

OH

* ①
H⁺

* ①

loss of H⁺
$HSO_4^⊖$ weak
base

O⁺—H
H   H

* ①
H₂O

⊕
H

* ①
C⁺ rearr.
2° → 3°

⊕
H

HSO_4
⊖
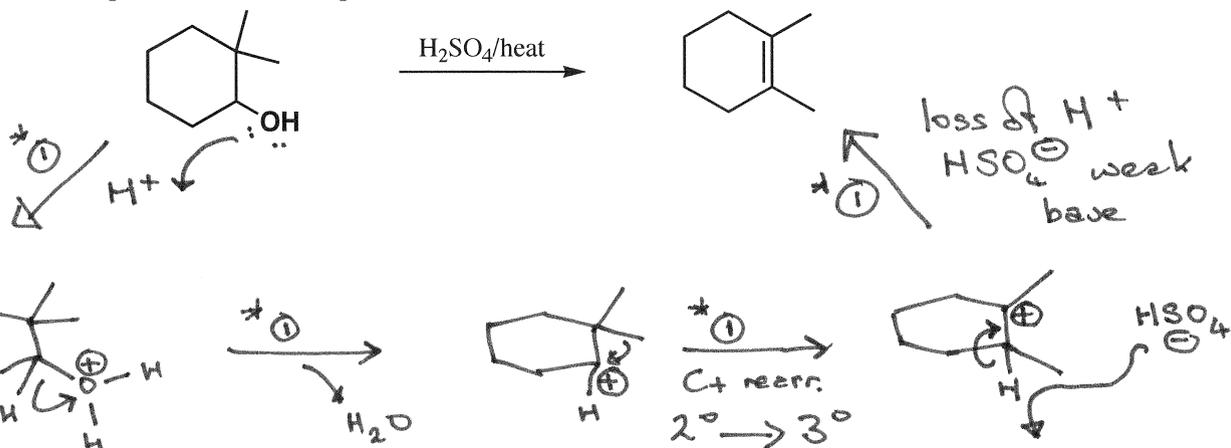
3. (4 points) Show the identity of compounds A and B in the reaction scheme shown below

2 for A
2 for B

A

HCl/EtOH

B

O OOH
Cl

H
OH
H
OEt
⊕OH

[A]
H
O
···H

HCl
EtOH

H
O⊕H
···H

EtOH

−H⁺

H
OH
H
···OEt

[B]
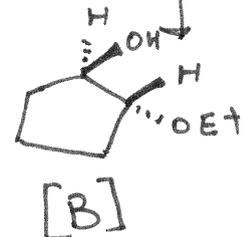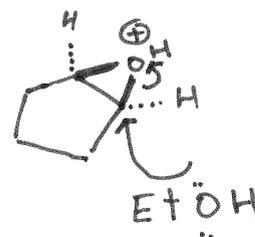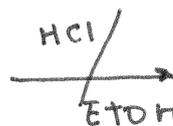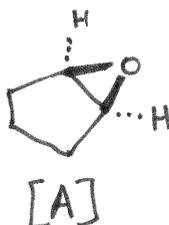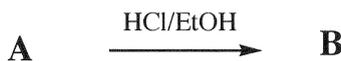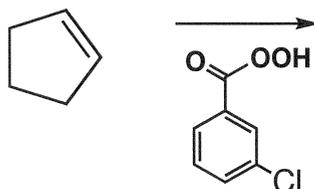
**PROBLEM SET #5 (contd) - Due in Friday April 4th at 4 pm**

4. (10 points) Show the reagents that would be needed to carry out the following transformations.

1. B_2H_6 (BH_3)

2. H_2O_2 / N_2OH

Anti-Markovnikov add^n

✱
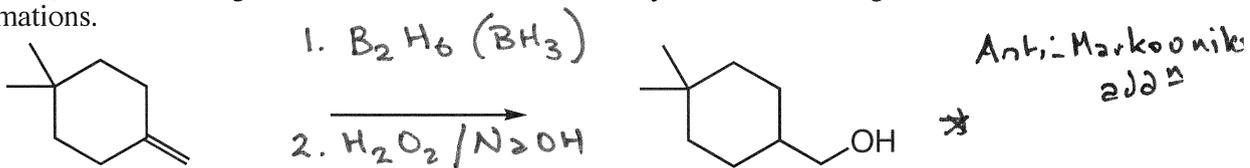
2 points
each.

(If 2 steps
on point for
each step)

1. HCl / H^+

Markovnikov
add^n

1. OsO_4

2. H_2O_2

1. O_3

2. ⌇S⌇
(dimethyl
sulfide)

1. HBr

peroxide $R-O-O-R$
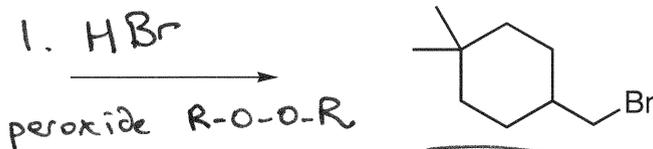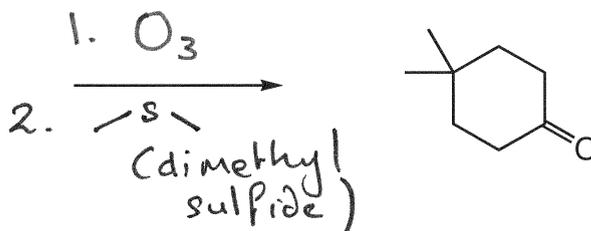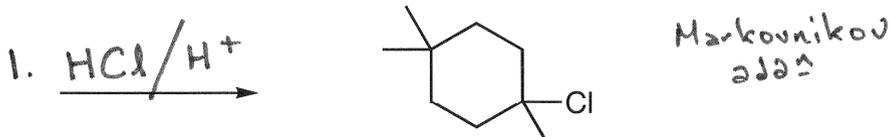
Suggested problems: 7.45, 8.18, 8.37, 8.50, 8.51, 8.64, 8.68

OR
≡
1. B_2H_6
2. H_2O_2
3. HBr (SN2 of product)
            from ✱