**HOMEWORK ASSIGNMENT #1 ORGANIC CHEMISTRY II \_\_\_/26 pts**

(due Wed 1 Feb 2017)

 Your name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 1 pt

1. Suggest a simple, one step route to the polymer: (CH2-CHCl)n, (2 pt)
2. If the substituted alkenyl halide, CH2=CHCl is treated with Br2 in wet CCl4, predict the most likely product. (Make sure to draw the structure explicitly with expected addition group orientation) (2 pt)



1. Provide a simple, 1or 2 step pathway to the compound shown to the right:

(2 pts)

**4.) Fill-in the boxes (11 pts)**

a)

 + **2-bromo-2-methylpentane**

b)

2-methyl-2-pentene +

 **3-bromo-2-methyl-2-pentanol**

c)

 OsO4

 **syn or anti? (circle choice)**

2-methyl-2-hexene

 1 pt 1 pt

d)

 **{-CH-CH-}n**

 **| |**

 **Cl Cl**

e) **1-pentanol exclusively (>90% yield)**

 **\_\_\_/17**

**Classify the reactions written below into one of the alkene reaction categories: (5 pts)**

1. Carbocation based addition (C+)
2. Bridgehead (halohydrin) addition (B)
3. Radical-based addition ( R )
4. Organometallic/redox based addition (O/R)
5. Specials (=SP=ozonolysis and allylic substitution)
6. Conc H2SO4 + ethylene, then H2O 🡪 ethanol \_\_\_\_\_\_\_
7. NBS + isobutylene 🡪 3-bromo-2-methylpropene \_\_\_\_\_\_\_



1. CHCCl3 with OH- + 2,3-dimethyl-2-butene🡪 \_\_\_\_\_\_\_
2. Anti-2,3-dibromobutane forms \_\_\_\_\_\_\_
3. Anti-diol formed \_\_\_\_\_\_\_

**Suggest three different ways to make 2-butene (3 pts)**

**\_\_\_/8**