

Week #5 Problem Set
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1. i) Rank the following acids according to *increasing* acidity.

A.

HCl

HF

HBr

B.

i-PrOH

t-BuOH

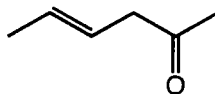
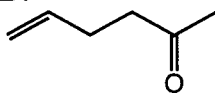
MeOH

C.

CF₃CH₂OH

(CF₃)₂CHOH

D.



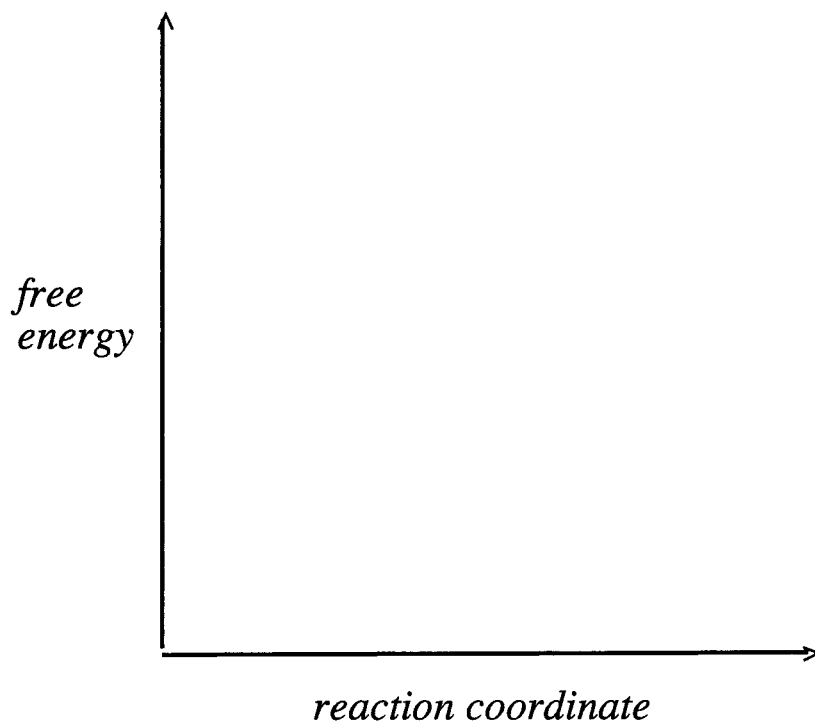
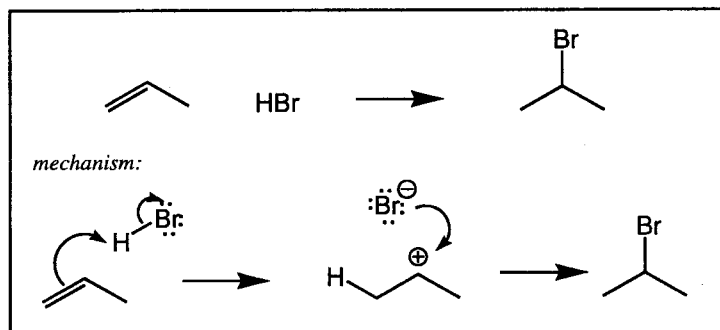
2. Show the products of the following reactions.



3. What is the complete structure of H_2SO_4 ?

4. Define *transition state*.

5. The following reaction occurs in two steps. Draw a potential energy diagram showing reactants, transition states, the intermediate, and product. Clearly label all of the above. Assume that the reaction is *exothermic*.



- 6 i) Changing only *one* variable of problem 5 write a reaction that is *obviously* faster.
 ii) How will the potential energy diagram change?