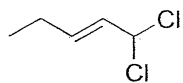
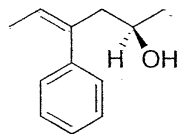


1. (3 pts each) Using IUPAC nomenclature like we discussed in class, name the following molecules unambiguously:



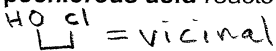
"trans" is also acceptable!
 (E)-1,1-dichloro-2-pentene

or (E)-1,1-dichloropent-2-ene

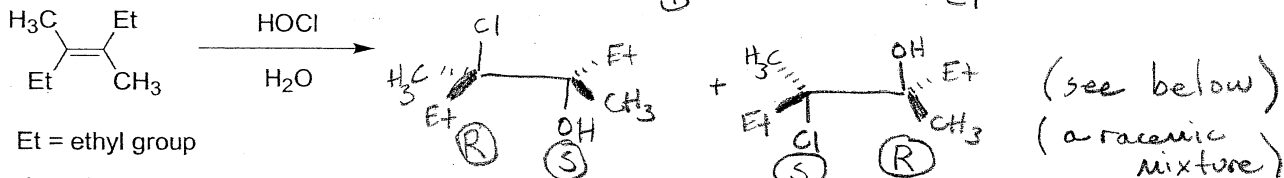
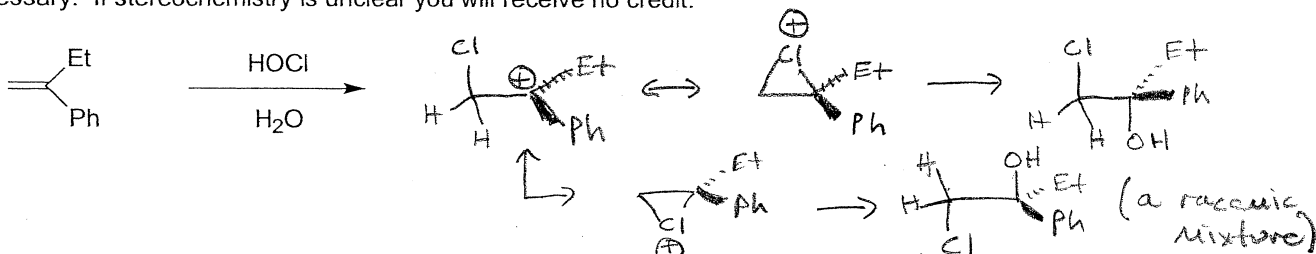


(Z)-2R-hydroxy-4-phenyl-4-hexene

2. Although we have not specifically covered this reaction in class, **hypochlorous acid** reacts with an alkene to give an **alcohol with a vicinal chloride group**.

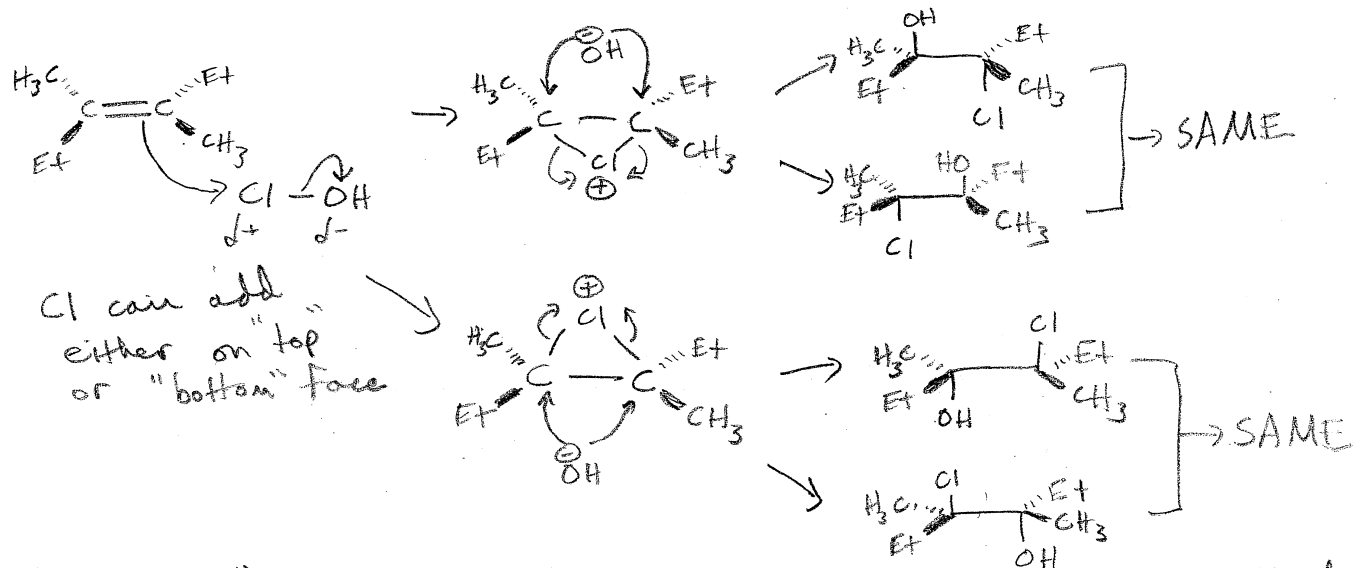


a. (4 pts each) Indicate **ALL** organic products of the following reactions, including stereochemistry clearly where necessary. If stereochemistry is unclear you will receive no credit:



Et = ethyl group

b. (8 pts) Draw a CLEAR mechanism for the addition of HOCl to (E)-3,4-dimethyl-3-hexene (the second example above). Using this mechanism, clearly JUSTIFY which products are formed.



"Chloronium" ion ensures OH (or H₂O!) undergoes backside attack
 ∴ only 2 of the possible 4 products are obtained!