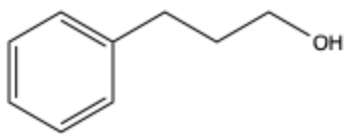
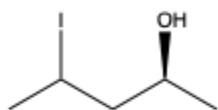


CHEM 2300 Solution 8

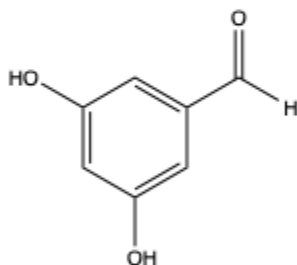
1. Name/Draw the following molecules



3-phenyl-1-propanol

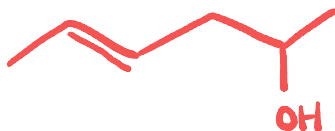


(2S)-4-iodo-2-pentanol



3,5-dihydroxybenzaldehyde

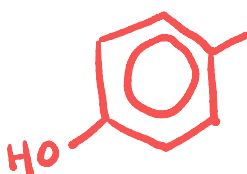
(E)-hex-4-en-2-ol



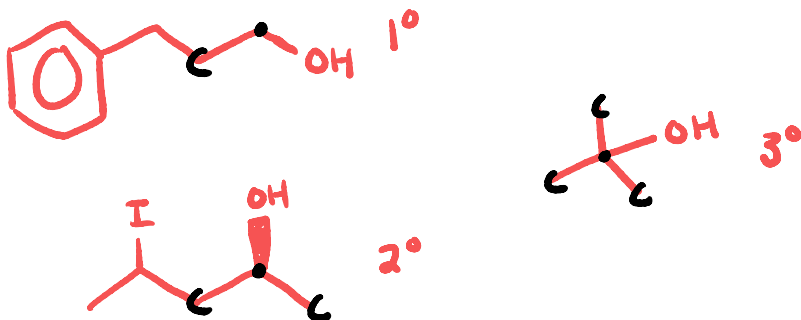
3-chlorocyclopentanol



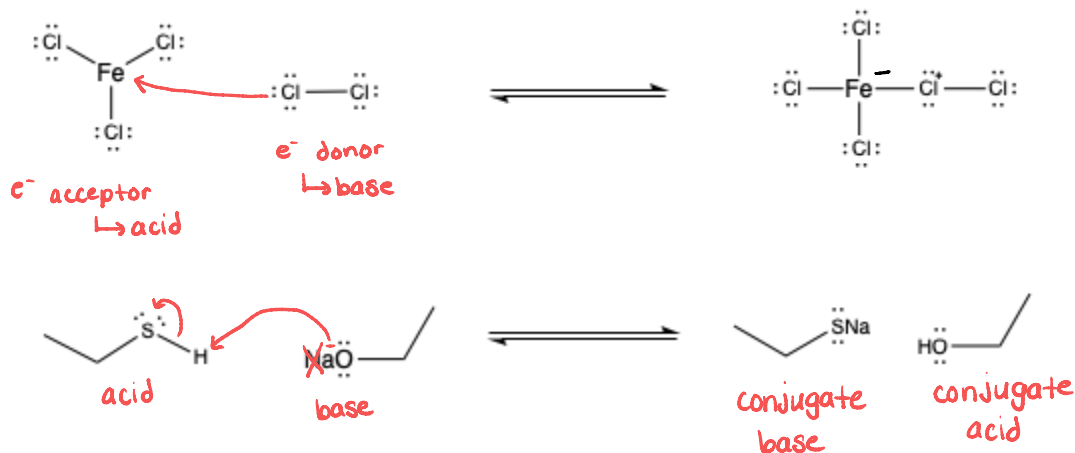
p-methylphenol



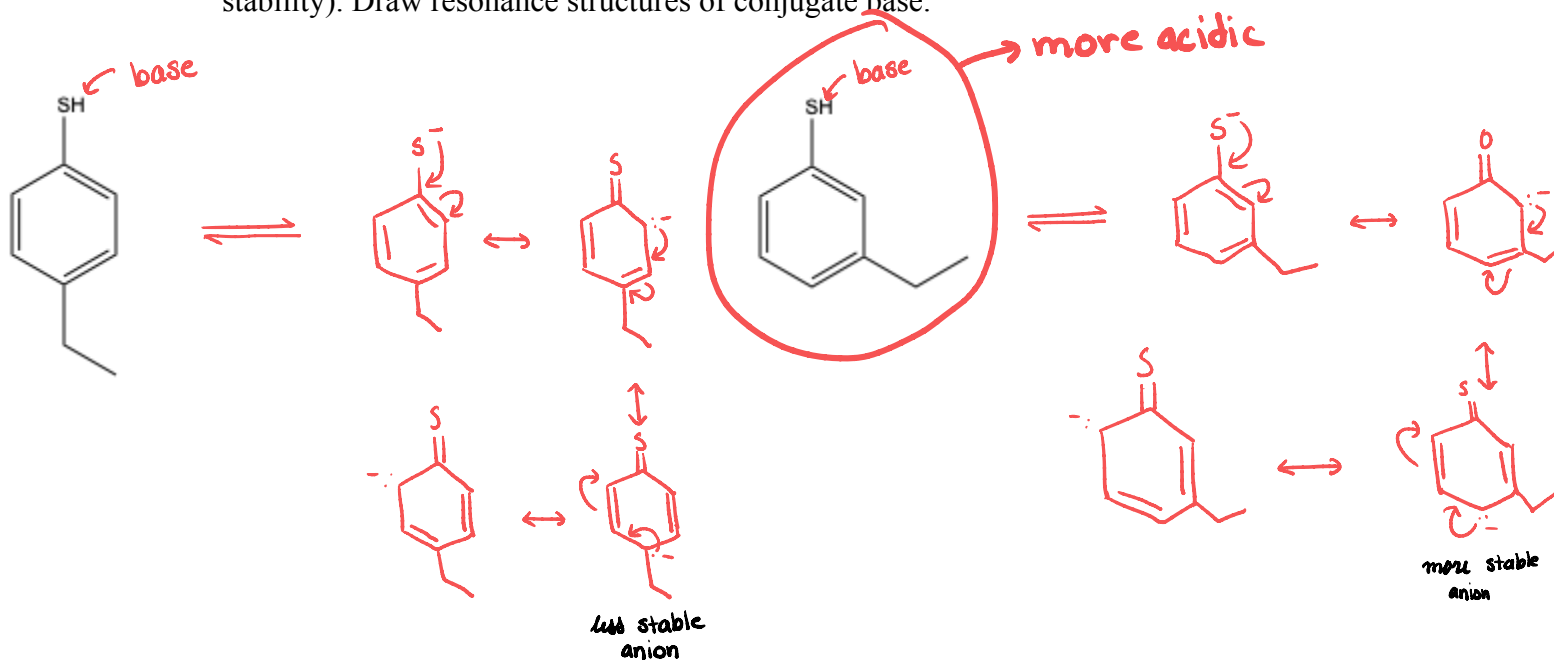
2. What kind of alcohol (primary, secondary, etc.) are the first and second molecules in the question above? Draw a tertiary alcohol.



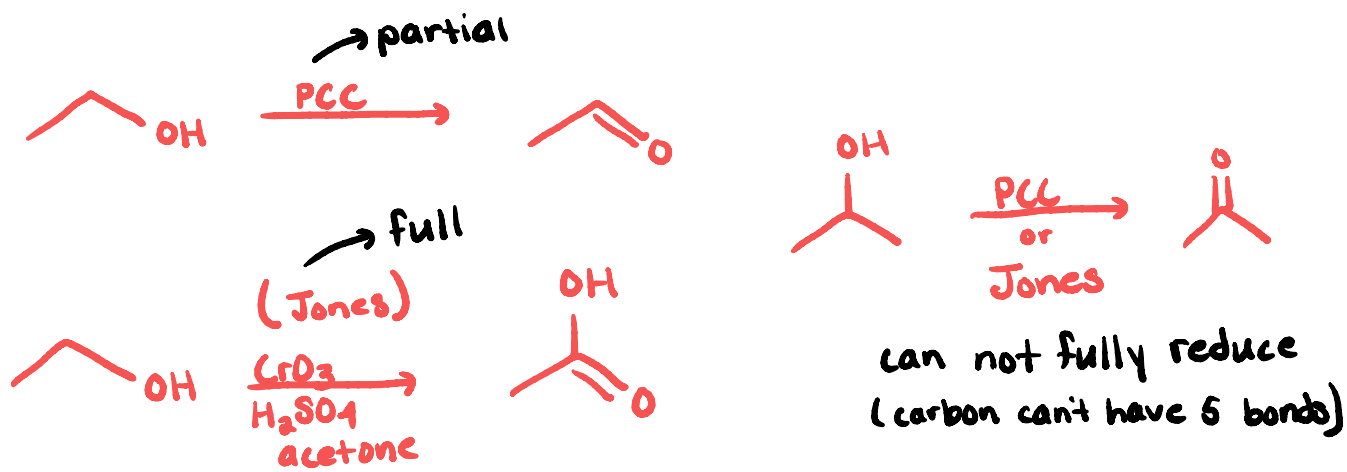
3. Identify the acid, base, conjugate acid, and conjugate base in each question (for the first one don't list the conjugate acid and conjugate base). Then show how electrons are moving to get the products.



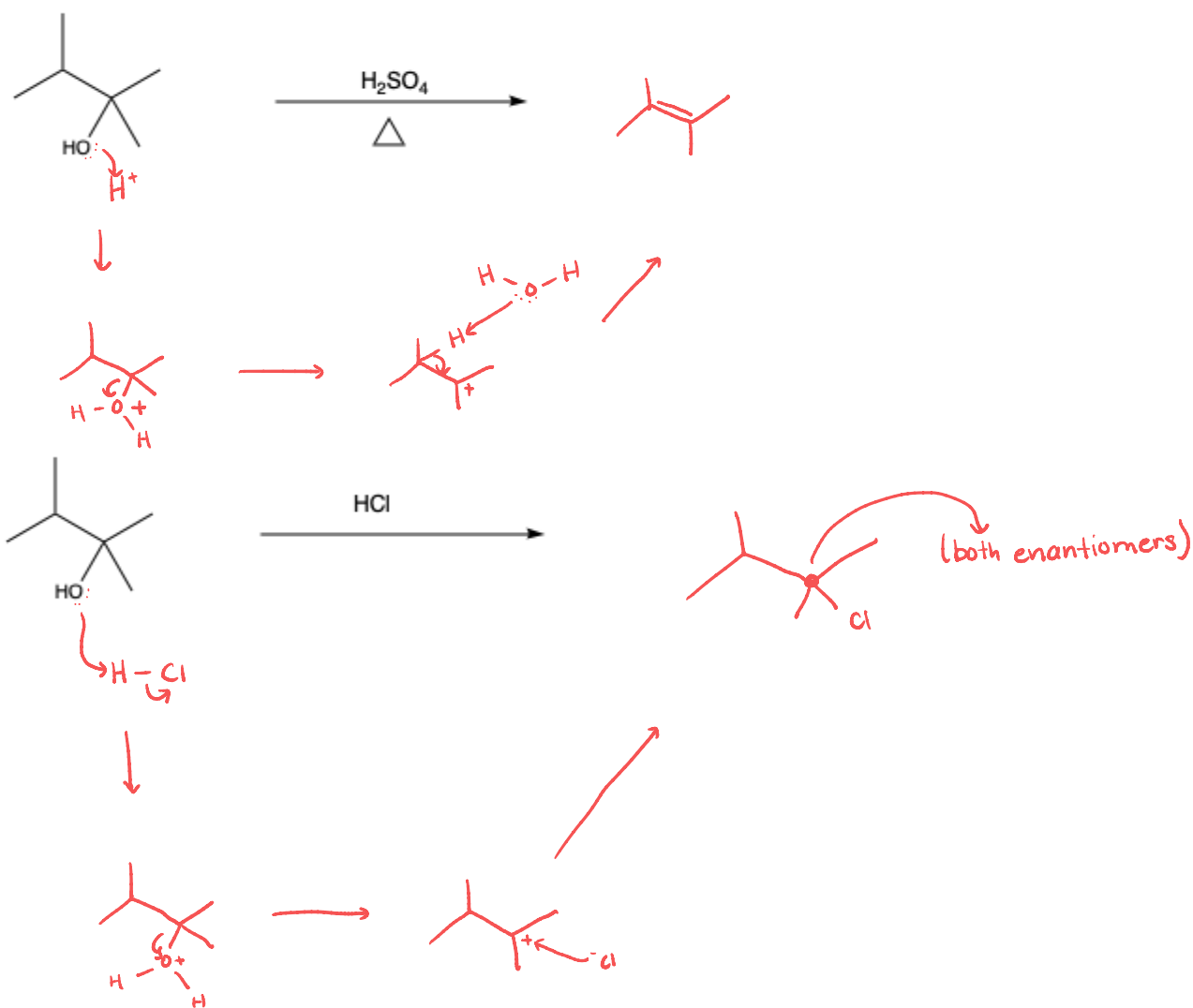
4. Which compound is more acidic? (Hint: anion stability is the opposite of carbocation stability). Draw resonance structures of conjugate base.



5. What would you use to partially reduce a primary alcohol to an aldehyde? What would you use to fully reduce a primary alcohol to carboxylic acid? Show this with ethanol. Why wouldn't it matter for secondary alcohols?

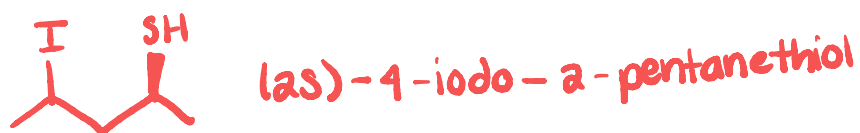


6. Show the mechanism and major product of the following reactions

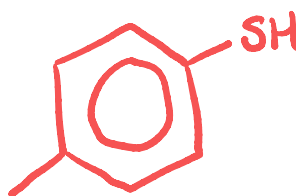




7. Referencing the first question, name the second molecule if it was SH attached instead of OH and draw the last one if it was called p-methylthiophenol.



p-methylthiophenol



8. Synthesize the following molecule starting only with a three-carbon alkene (Hint: start with two equivalence of the three-carbon alkene).

