

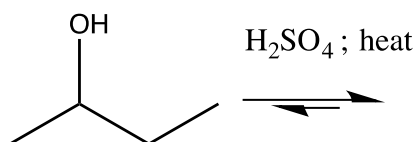
Chem 343

Name: _____

Quiz 9

Section: _____

1. In this experiment, we are dehydrating 2-butanol to yield the 3 possible isomeric butenes as products. Draw them.



2. How will we isolate the crude mixture of butene products?

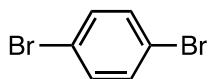
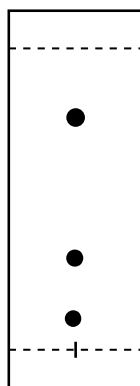
- we will extract them in dichloromethane
- we will recrystallize them in ethanol
- we will collect them as a gas mixture over water
- we will use fractional distillation to separate them

3. How will we analyze the mixture of butene products to see how much of each one was formed?

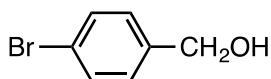
- We will measure their respective boiling points of each isomer after separation.
- We will measure the mass of each component after separation; they all have the same molecular weight so it will be straightforward to calculate the mole fraction.
- We will do gas chromatography and use the integration of the peaks to calculate the mole fraction of each isomer.
- We will use polarimetry because they are isomers.

7. You are advised that the isomers elute based on either bp or polarity depending on the column we use in this experiment. Since this means that the order of elution may change depending on the column used, you are advised to use Zaitsev's Rule as the 'fool-proof' determinant in deciding which peak correlates to which isomer. In your own words, what is Zaitsev's Rule?

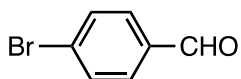
8. A student had a mixture of the 3 aromatic compounds shown below. She ran TLC on a silica gel plate using chloroform as her mobile phase. Match each spot to its probable identity (A, B, or C).



A



B



C