

# CHEM 252 PRACTICE EXAM

Key

What are the final products of the reaction below.

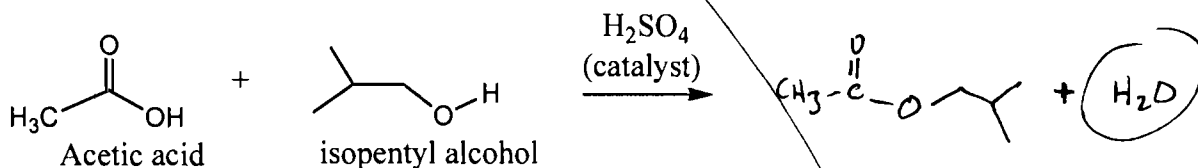
What is the limiting reagent for this reaction?

isopentyl alcohol

Is Sulfuric acid (H<sub>2</sub>SO<sub>4</sub>) consumed in this reaction?

no is a catalyst.

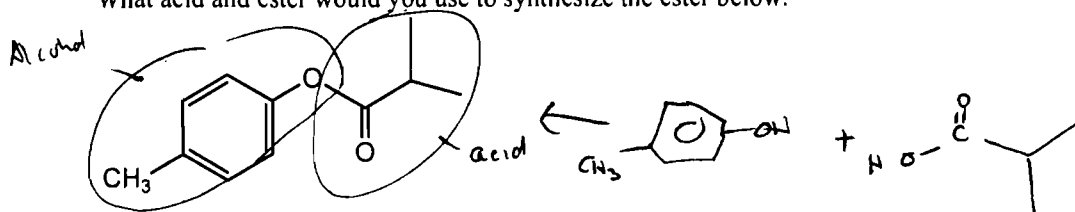
Reaction equation:



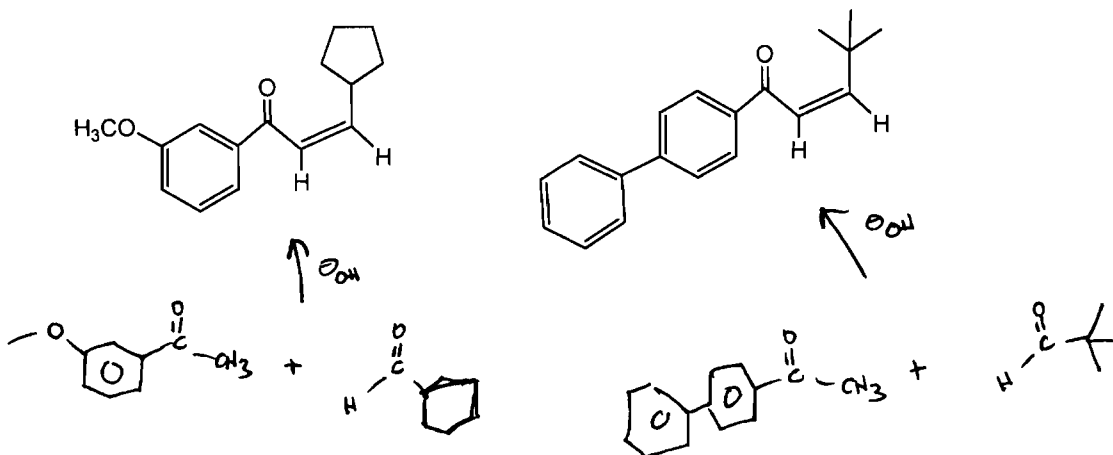
Reagent table:

Name	MW	mp	bp	Density	amt used/exp	moles used/exp	notes
Acetic acid	60		130C	1.1 g/mL	3.5 mL	0.064	
Isopentyl alcohol	88		156 C	0.9 g/mL	2.5 mL	0.025	
Sulfuric acid	98		180C	1.9 g/mL	0.5 mL	0.09	Catalyst

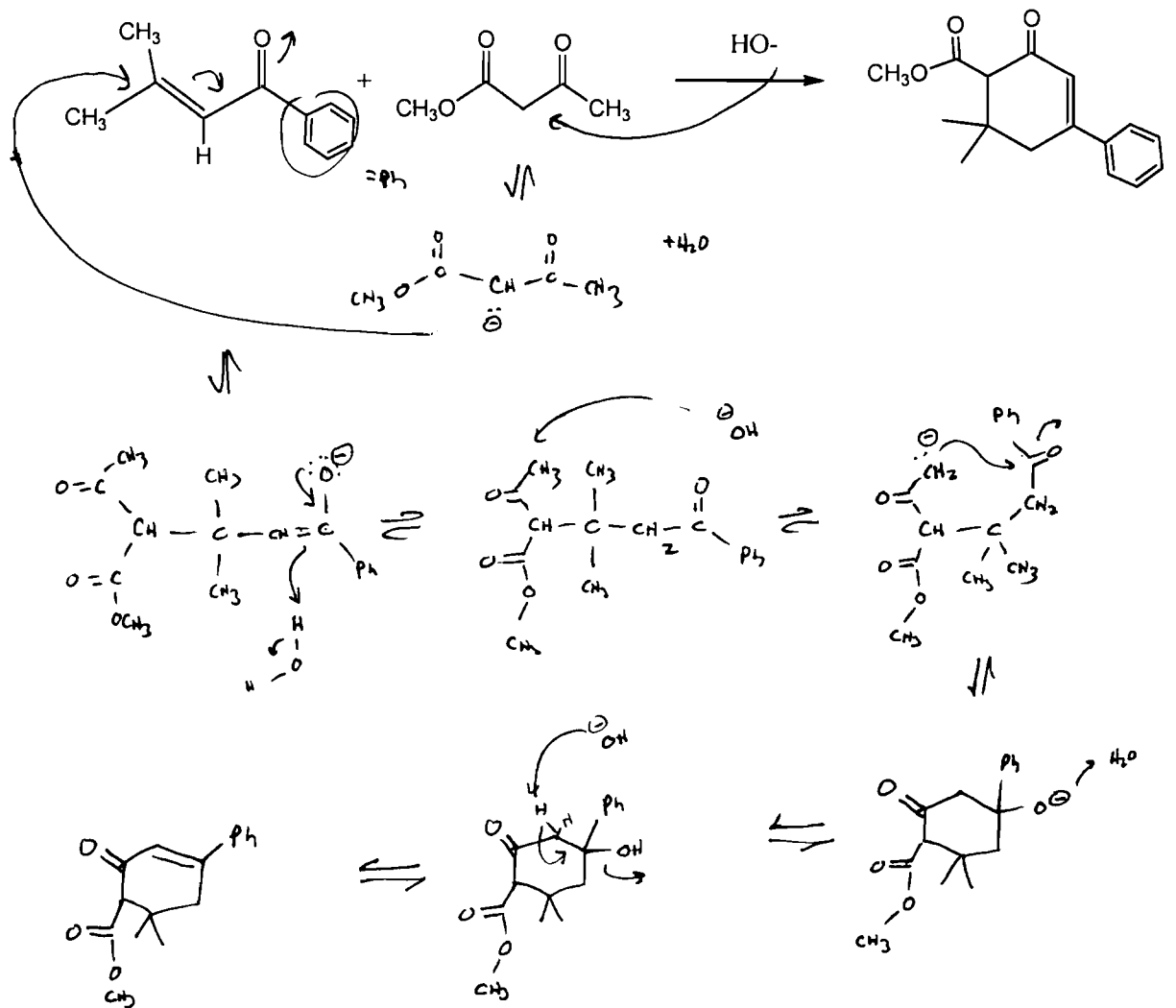
What acid and ester would you use to synthesize the ester below.



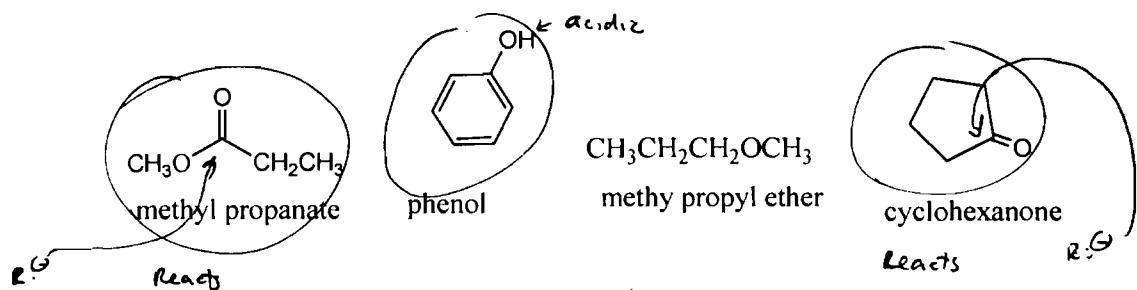
What is the Ketone and aldehyde that reacted in an Aldol condensation to produced the following chalcones :



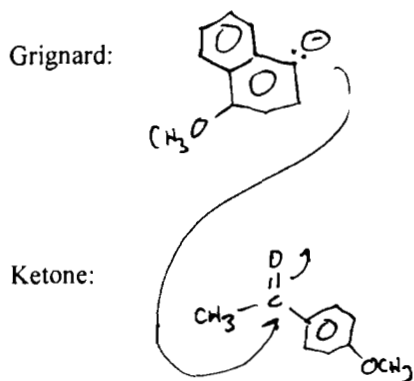
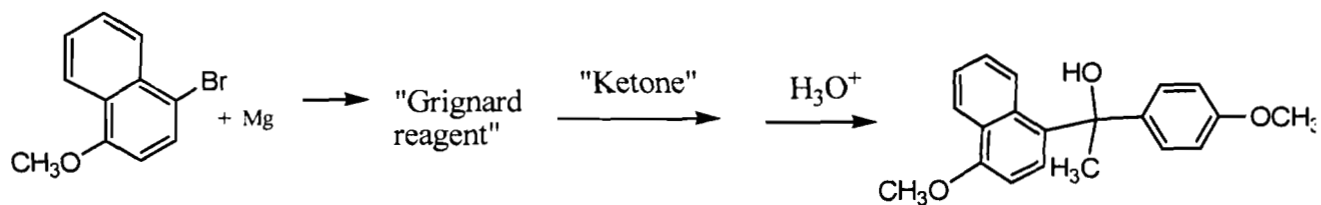
Draw the mechanism for the reaction below (it is a Micheal addition followed by a Aldol dehydration)



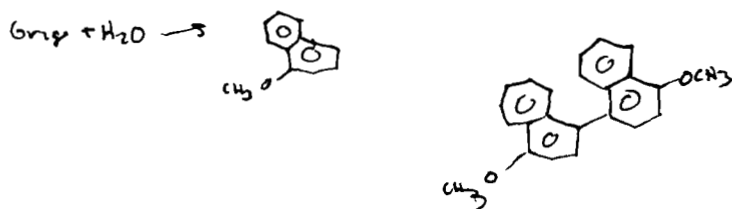
Circle the compounds below could NOT be used as a solvent in a Grignard reaction?



For the Grignard reaction shown below, draw the structure of the Grignard reagent and ketone that it would be added to make the final product listed.



b) (6 pts) Draw the structures of the **2 main impurities** of this reaction—do NOT include any magnesium salts. (Assume that some water got into your reaction mixture).



c) (4 pts) Which step of the above reaction is faster: 1) formation of the Grignard reagent or 2) reaction of the Grignard reagent with the Ketone.

↓  
remember in the lab - it took a long time.