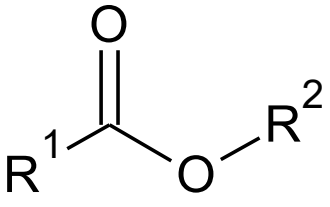
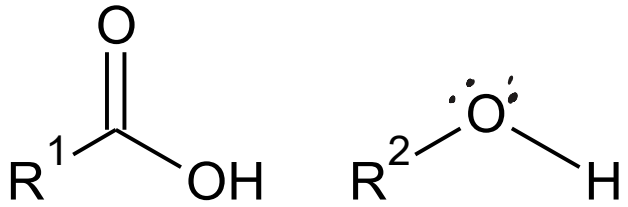
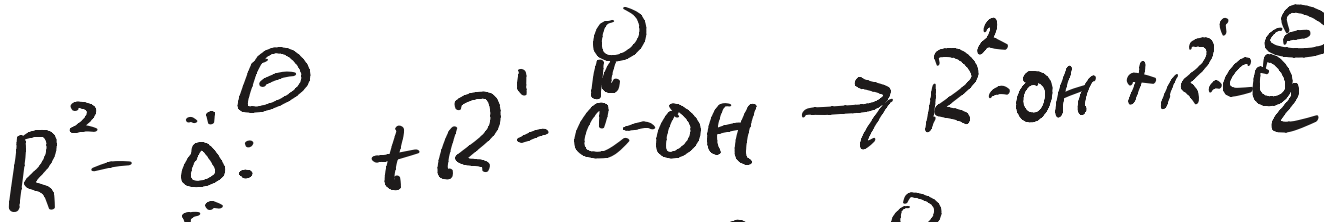
Fischer Esterification

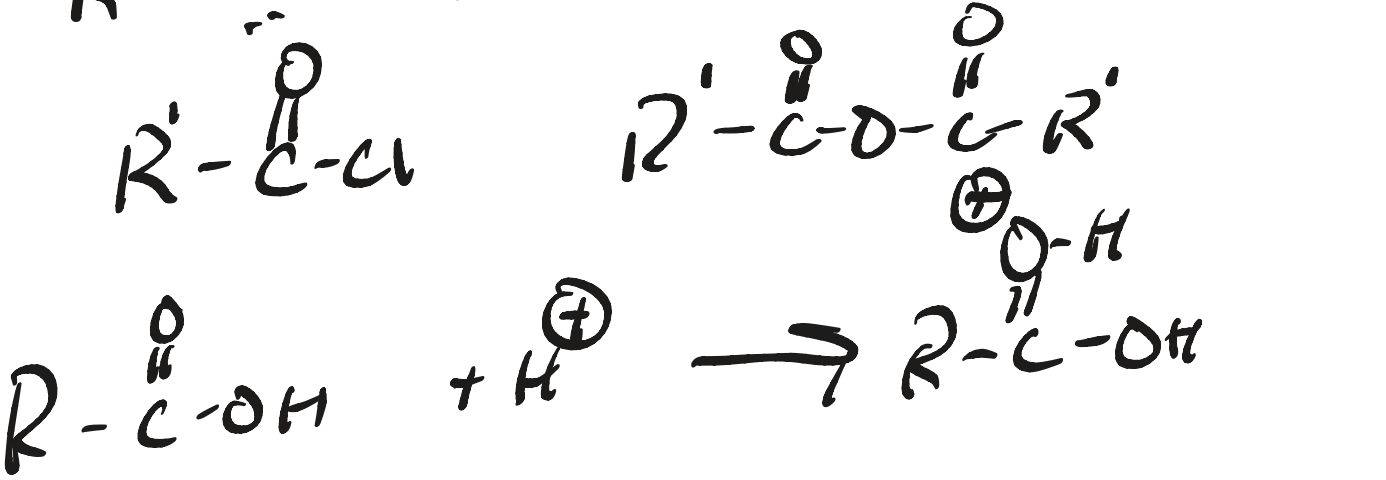
220 C

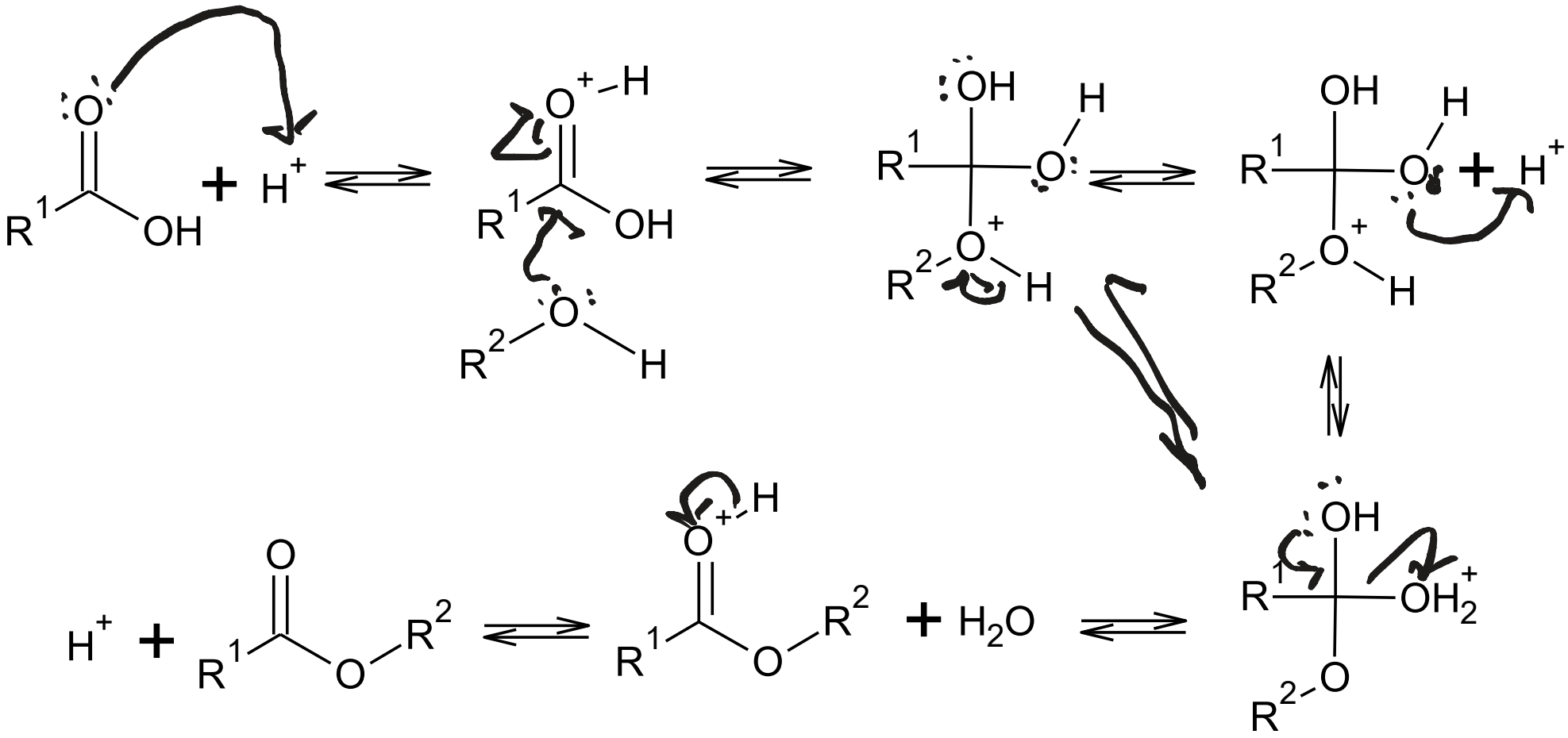
11/2/16





1. 

2. 



1. $H^{\oplus}$ source H_2SO_4

2. equilibrium problem

$$K_{eq} = \frac{[H_2O][Ester]}{[Alcohol][Acid]} \approx 4$$

$$4 = \frac{x \cdot x}{(1-x)(1-x)}$$

$$4 = \frac{x^2}{(1-x)^2}$$

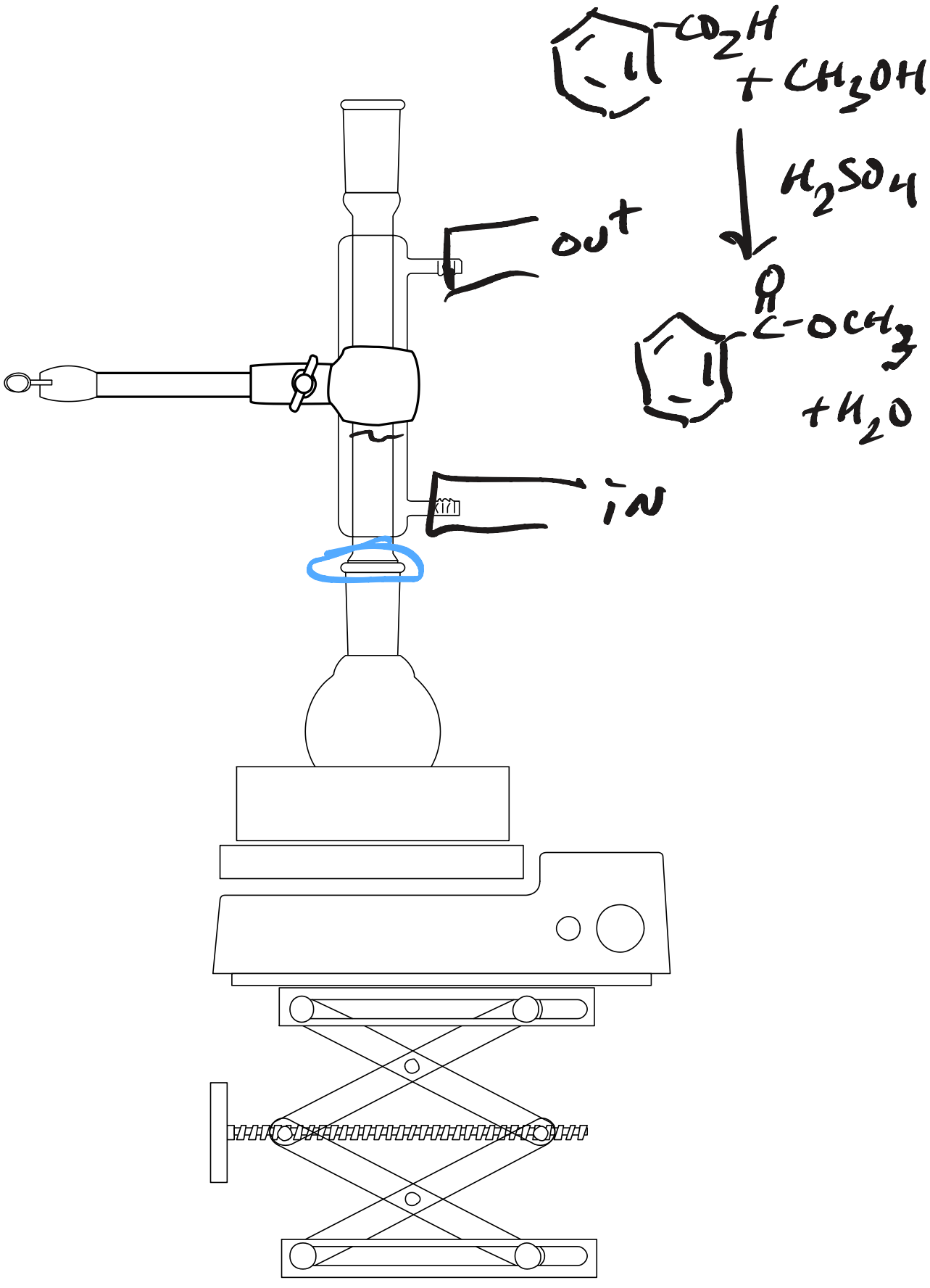
$$2 = \frac{x}{1-x} \Rightarrow 2/3 \; 66\,2/3\%$$

$$4 = \frac{x^2}{(1-x)(2-x)} \Rightarrow \sim 85\%$$

$$3x \Rightarrow 91\%$$

3. No product

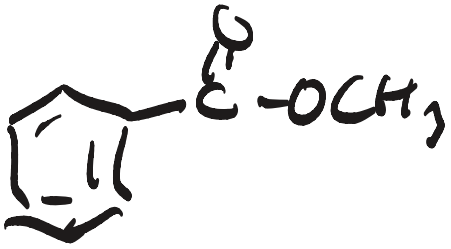
100% alcohol


CO2H
+ CH3OH
H2SO4
out
C-OCH3
+H2O
in

% yield 65%

30 - 50%

IR



C=O

C-H

O-H

2½ - 3

GC

