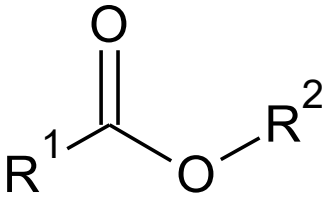
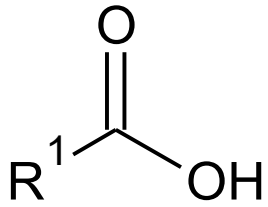
Fischer Esterification

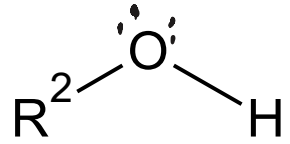
220 C

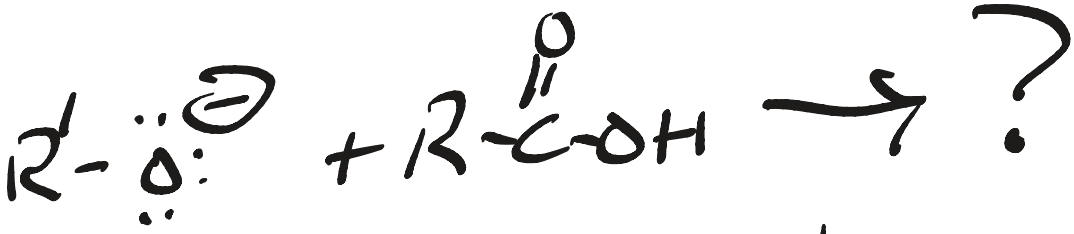
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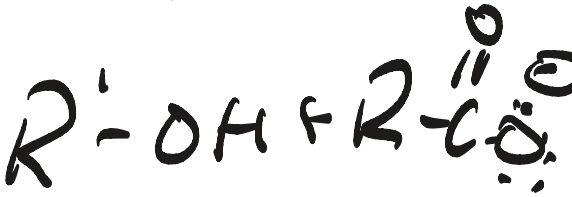
13ad

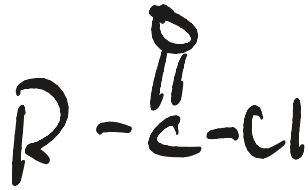


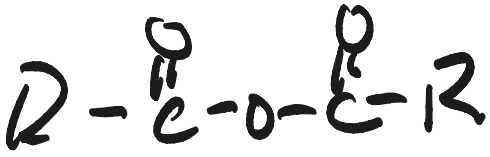


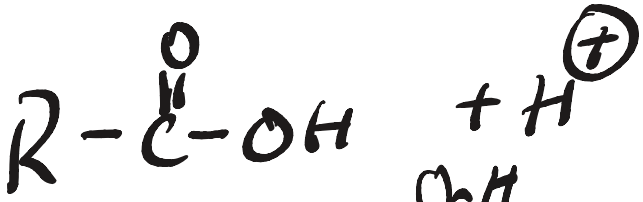


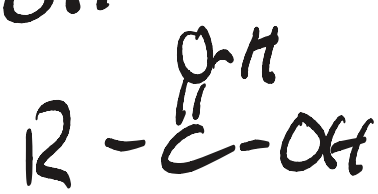
1. 

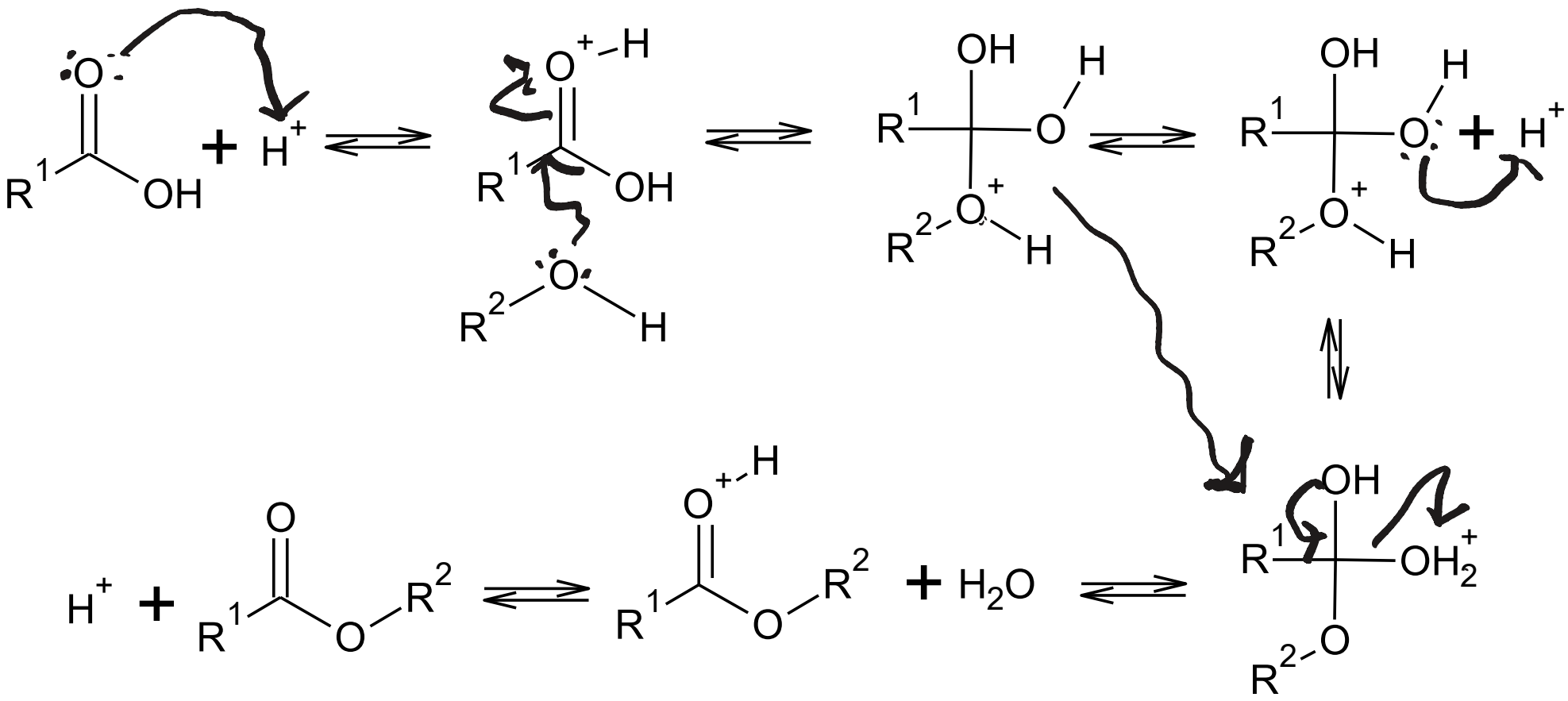


2. 








O
H+
R1
OH
R2
H
OH
H2O

1. $H^{\oplus}$ Source

2. equilibrium problem

$$K_{eq} = \frac{[\text{Ester}]_{x}[H_2O]_{x}}{[\text{Alcohol}]_{1-x}[\text{Acid}]_{1-x}} \simeq 4$$

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

$$2 = \frac{x}{1-x} \qquad x = 2/3$$

67%

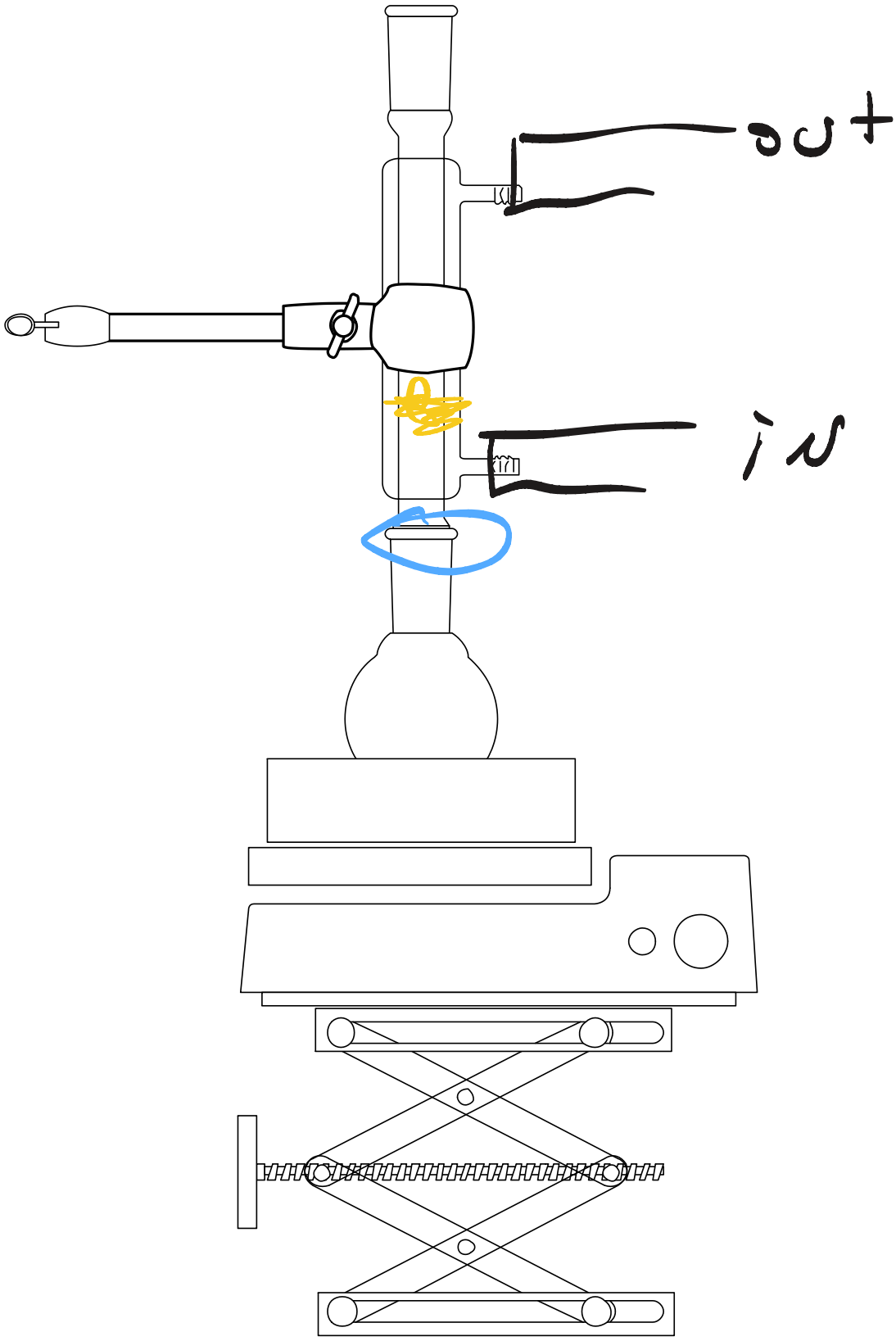
$$4 = \frac{x^2}{(1-x)(2-x)} \qquad \simeq 85\%$$

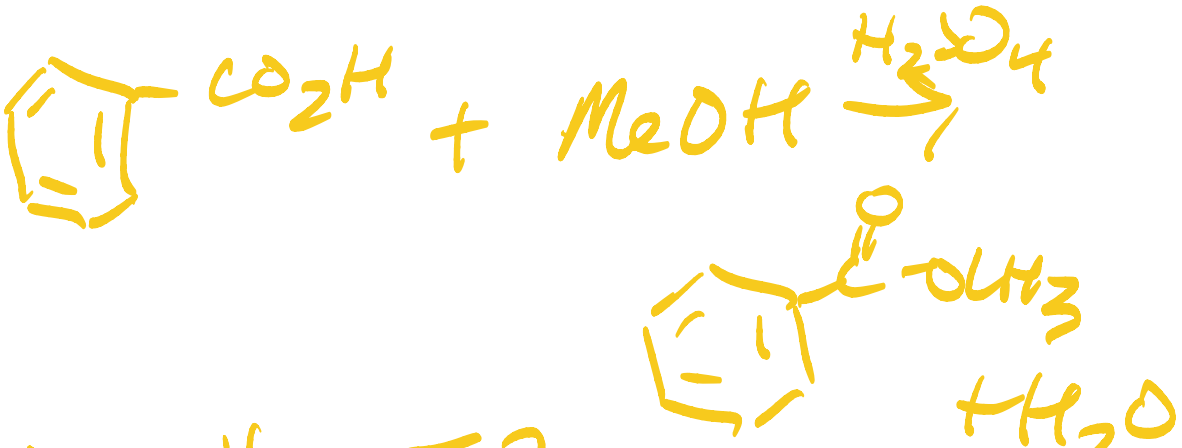
$3x \simeq 91\%$

3. No products in Reaction

Start Solvent

100%


out
in



% yield, IR

65%

30-50

D

ester

Carbonyl

No OH

C-H Medium

Stronger

