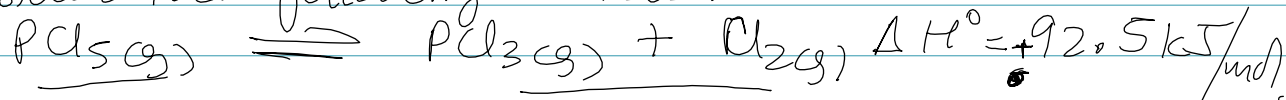


Eg ⑨ LeChatlier's Principle.

Q1

Consider the following reaction:



Predict the direction of the eq. under the following change of conditions -

① Temp. is increased - $\Delta H = \overset{\text{shape}}{\text{endothermic}}$, heat is reactant - rxn will move forward \rightarrow

② more Cl_2 is added. Cl_2 is product rxn back to reactant \leftarrow

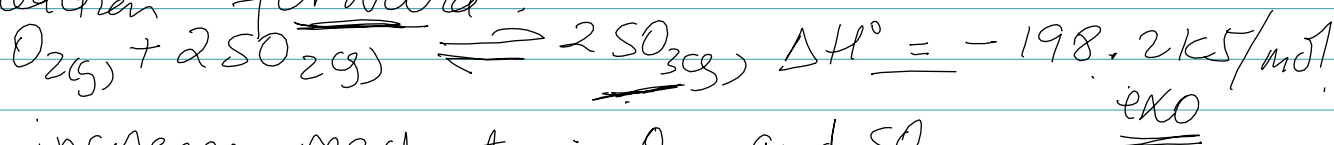
③ some PCl_5 is removed. PCl_5 is reactant. rxn backward to reactant \leftarrow

④ Pressure is increased. $\text{mols react} = 1$ $\text{mol prod} = 2$
 \downarrow
 P increase Vol. decreased
 so go to direction of less mols.
 \therefore reactant side rxn \leftarrow

⑤ A catalyst is added. $\text{no change b/c forward \& reverse reactions are increased}$

⑥ add inert gas - no effect -

Q2 Give all the conditions that will shift the following reaction forward.



① increase reactants : O_2 and SO_2

② remove products : SO_3

③ ~~decrease~~ increase P. b/c products has less mols
 \therefore requires less vol.

④ if heat is part of product - so remove heat.
 - cool the reaction.