7. (14 pts) For each X predict the molecules that would be present in that solvent by placing the number of the compound(s) that are soluble in that phase. Start with two phases of ether and HClaq.

![Diagram]

- Ether
- aquesous HCl

- Ether
- aquesous NaOH

- 5, 2, 4
- 3, 5, 1

- H^+ + SO_4^{2-} \rightarrow H_2SO_4
- NaOH + H_2SO_4 \rightarrow H_2O + Na_2SO_4
- + HCl →
- + NaOH →