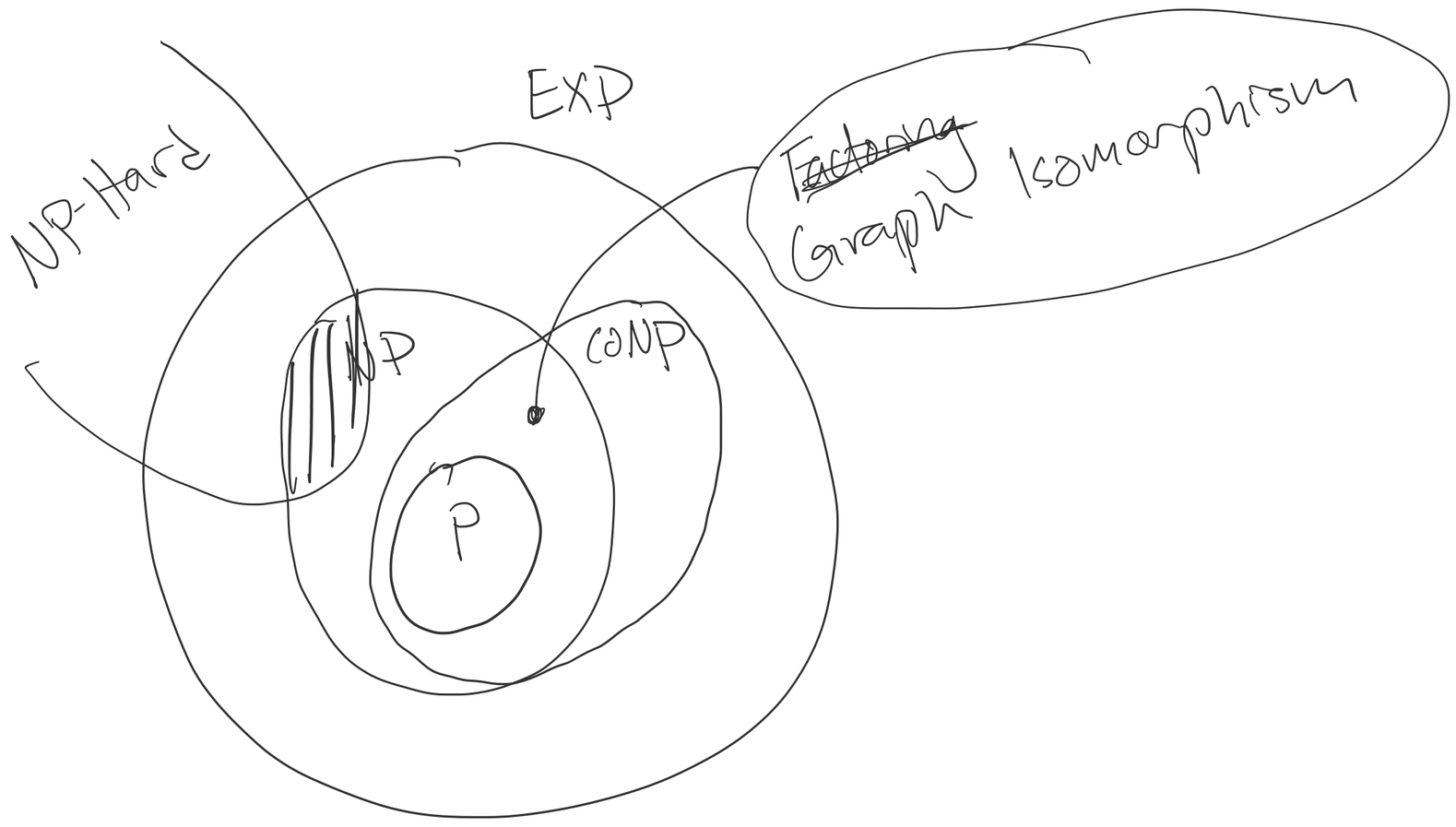
- Where is coNP in our picture?
- For any finite sized language in ~~NP~~, the complement of that language will be infinitely large, which doesn't seem useful.



$P \subseteq coNP$

$coNP \subseteq EXP$

$L \in P$. $\exists$ a polytime TM such that $M(x) = 1$ iff $x \in L$. Consider TM M', that outputs the opposite of M ($q_{accept} \leftrightarrow q_{reject}$). M' decides $\bar{L}$, therefore $\bar{L} \in P$. Thus $\bar{L} \in NP$

So $L \in coNP$.

$L \in coNP$. Then $\bar{L} \in NP$. Thus $\bar{L} \in EXP \rightarrow L \in EXP$

$\exists$ exponential time TM M that decides $\bar{L}$. Consider M' that acts like M but exchanges $q_{accept} \leftrightarrow q_{reject}$

M' decides L.