VersaPRM: Multi-Domain Process Reward Model via Synthetic Reasoning Data

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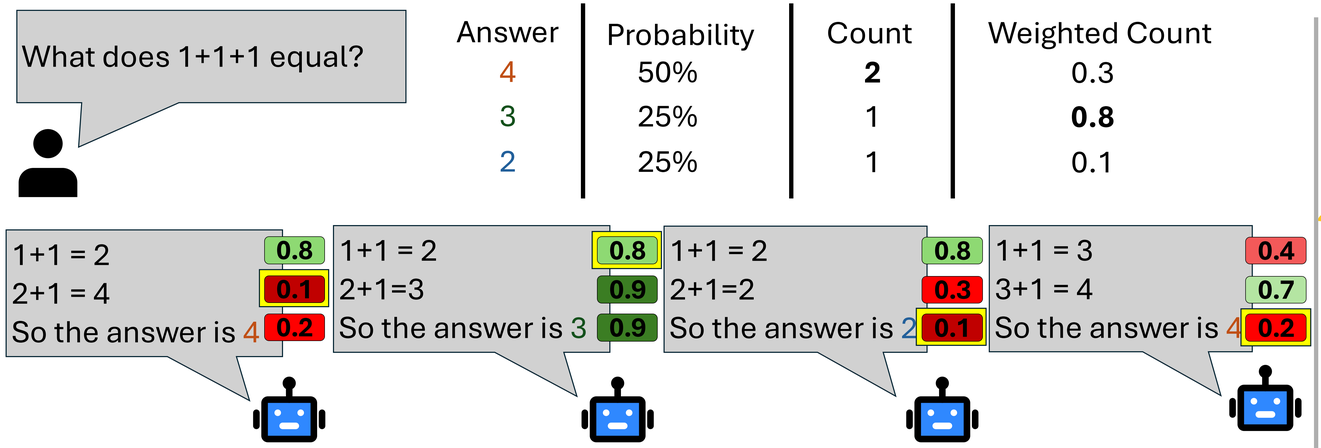
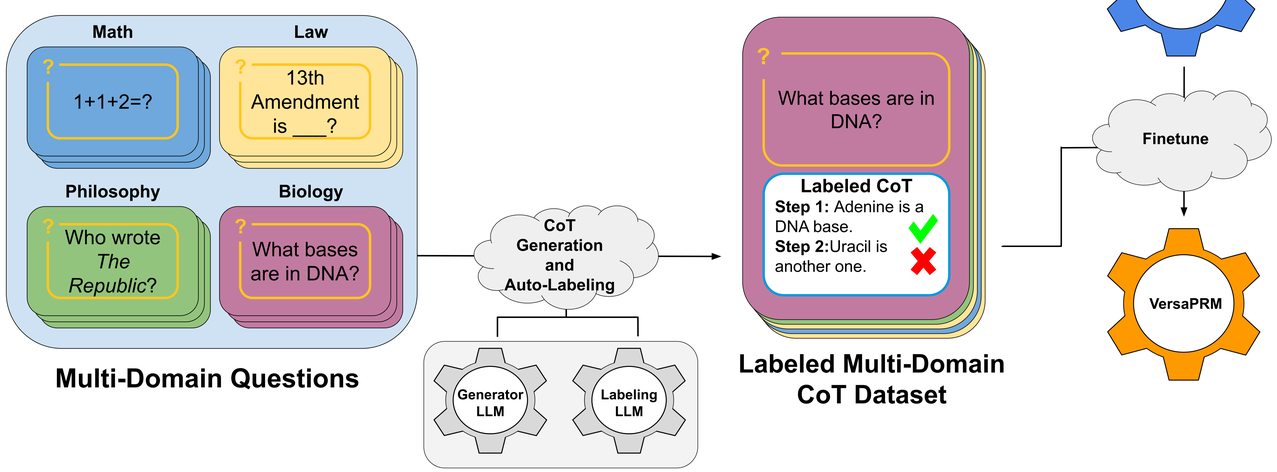
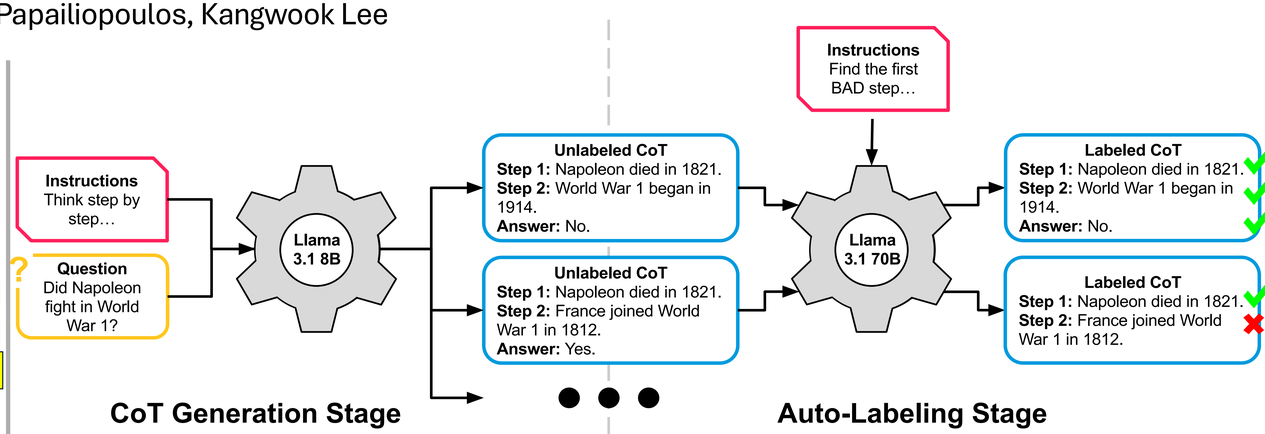


Can we create a PRM that generalizes to domains beyond math?

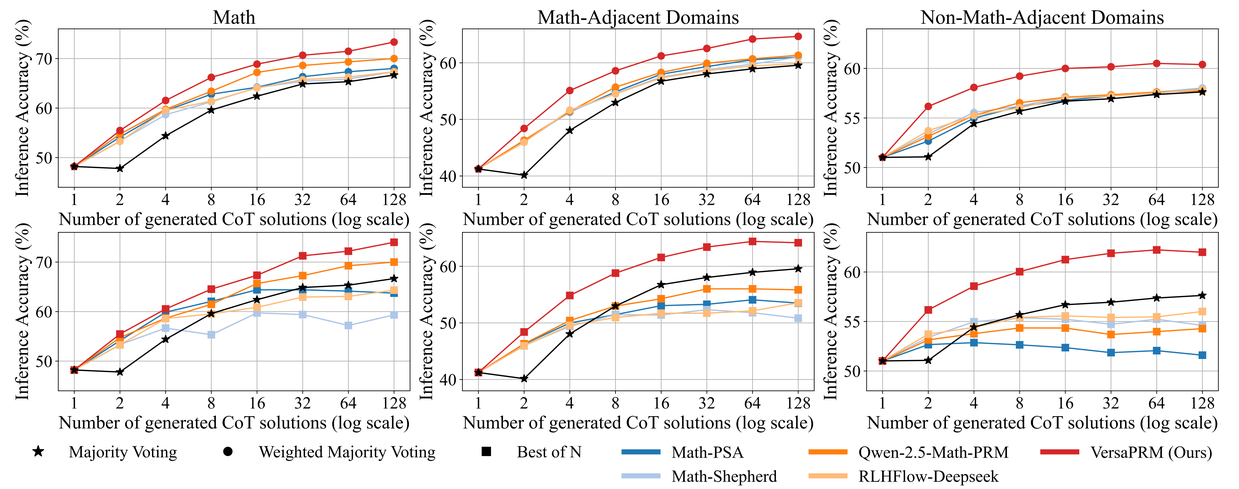
To create dataset to finetune VersaPRM:

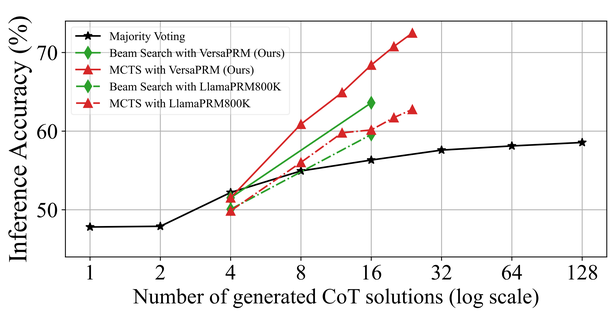
- We source multi-domain multiple choice questions from MMLU-Pro
- Use Llama70B to annotate correctness of reasoning step
- *Crucially*, provide the correct final answer in the system prompt used for annotation





Experimental Results





Findings:

- Finetuning with synthetic multi-domain data can enhance PRM performance in non-math domains
- Improvement is present across all tested domains
- The key ingredient is **diverse** data that we **synthetically** generate