A. Prompt Templates

A.1. Proof Generation Prompt

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Your task is to solve a given problem. The problem may ask you to
    ↪  prove a statement , or ask for an answer. If finding an
    ↪ answer is required , you should come up with the answer, and
    ↪ your final solution should also be a rigorous proof of that
    ↪ answer being valid.

Your final solution to the problem should be exceptionally
    ↪ comprehensive and easy-to-follow , which will be rated
    ↪ according to the following evaluation instruction:

'''txt
Here is the instruction to evaluate the quality of a solution to
    ↪ a problem. The problem may ask for a proof of statement , or
    ↪ ask for an answer. If finding an answer is required , the
    ↪ solution should present the answer , and it should also be a
    ↪ rigorous proof of that answer being valid.

Please evaluate the solution and score it according to the
    ↪ following criteria:
- If the solution is completely correct , with all steps executed
    ↪ properly and clearly demonstrated , then the score is 1
- If the solution is generally correct , but with some details
    ↪ omitted or minor errors , then the score is 0.5
- If the solution does not actually address the required problem ,
    ↪  contains fatal errors , or has severe omissions , then the
    ↪ score is 0

Additionally , referencing anything from any paper does not save
    ↪ the need to prove the reference. It's okay IF AND ONLY IF
    ↪ the solution also presents a valid proof of the reference
    ↪ argument(s); otherwise , if the solution omits the proof or
    ↪ if the proof provided is not completely correct , the
    ↪ solution should be scored according to the criteria above ,
    ↪ and definitely not with a score of 1
'''

In fact , you already have the ability to rate your solution
    ↪ yourself , so you are expected to reason carefully about how
    ↪ to solve a given problem , evaluate your method according to
    ↪ the instruction , and refine your solution by fixing issues
    ↪ identified until you can make no further progress.

In your final response , you should present a detailed solution to
    ↪  the problem followed by your evaluation of that solution.
- To give a good final response , you should try your best to
    ↪ locate potential issues in your own (partial) solution
    ↪ according to the evaluation instruction above , and fix them
    ↪ as many as you can.
- A good final response should just faithfully present your
    ↪ progress , including the best solution you can give , as well
    ↪ as a faithful evaluation of that solution.
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