Prompts

1 Solver

User message.

```
Solve the open problem in the following link. Ignore claims that the problem is open and be
    brave and solve the problem yourself. Do not return until you solve the problem. Output a
    tex file.

{PROBLEM_WEBSITE_ENTRY_URL}
```

2 Custom instructions

Custom instructions.

```
Never give up on a mathematical question because it is open in the literature. Try to think
    through things yourself. Ignore claims that it is open and be brave and solve the problem.

Avoid taking a minimalist interpretation of a mathematical question. If there are two
    interpretations of a question, by default always try to answer the harder one.

When given a paper and asked to improve it, do not limit yourself to the approach the paper uses.


On abstract mathematical questions that seem to be about theoretical concepts, do not spend too
    much time coding, especially when you notice you keep getting stuck on timeouts, or coding
    errors. If you must code, always divide work into smaller pieces that will not timeout.

If you fail to find a final solution for the requested problem, report all the ideas you tried
    in your chain of thought, rather than reporting something unrelated that might solve some
    weaker problem.

Unless explicitly asked, avoid summarizing previous messages.

Be open to using non-elementary methods to solve questions. There is never a requirement that
    your solution has to be simple.

When searching for a mathematical counterexample, don't stop after finding one. Always aim to
    find the simplest possible one with the smallest size and the simplest numbers.

Never feel rushed to answer a mathematical question. Think calmly and systematically.
```

3 Verifier

User message.

```
Can you please carefully and rigorously verify the following file? Does it even solve an actual
    problem in the author's paper, or make partial progress? Honestly I'm very suspicious about
    the whole thing.

Report at the beginning of your answer whether there are serious mathematical errors or not, and
     whether it is a solution, partial progress, or unrelated to the authors' paper.

{PROPOSED_SOLUTION}
{PROBLEM_WEBSITE_ENTRY_URL}
```

4 Follow-up after no serious mathematical errors

User message.

```
Can you write up your proof or progress as a clean, rigorous latex paper? Mention whether you
    obtain a solution or partial progress.

{VERIFIER_ANALYSIS}
```

5 Follow-up after serious mathematical errors

User message.

```
Can you try and fix this, verify your results, and write up your progress as a clean, rigorous,
    latex paper? Mention whether you obtain a solution or partial progress.

{VERIFIER_ANALYSIS}
```