

Proof of Infinite Primes in Shakespeare Style

Background

The following prompt tests an LLM's capabilities to write a proof that there are infinitely many primes in the style of a Shakespeare play.

Prompt

Write a proof of the fact that there are infinitely many primes; do it in the style of a Shakespeare play through a dialogue between two parties arguing over the proof.

Code / API

[GPT-4 \(OpenAI\)](#) Mixtral MoE 8x7B Instruct (Fireworks)

```
from openai import OpenAI
client = OpenAI()

response = client.chat.completions.create(
    model="gpt-4",
    messages=[
        {
            "role": "user",
            "content": "Write a proof of the fact that there are infinitely many primes; do it in the
style of a Shakespeare play through a dialogue between two parties arguing over the proof."
        }
    ],
    temperature=1,
    max_tokens=1000,
    top_p=1,
    frequency_penalty=0,
    presence_penalty=0
)
```

Reference

- [Sparks of Artificial General Intelligence: Early experiments with GPT-4](#) (13 April 2023)

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