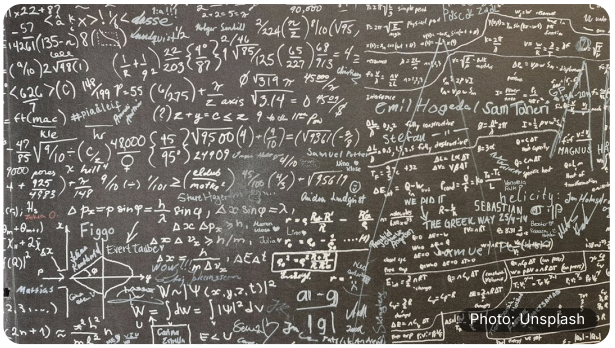
OpenAI reports Navier–Stokes solution

LEVEL C1


Photo: Unsplash

I. WARM-UP

1. What makes a scientific claim credible to you?
2. When should tech firms share early research?
3. How could AI change work in your field?

II. KEY VOCABULARY

controversy
public disagreement and debate about an important issue

rival
a competing person or organisation in the same field

autonomous
able to act by itself without direct human control

verify
to check and confirm that something is correct

equation
a mathematical statement that two expressions are equal

infinite
without any limit; too large to measure

flotation
the sale of a company's shares to the public

cybersecurity
protection against attacks on computer systems and data

III. READING

OpenAI says it has solved the Navier–Stokes maths problem: about 10,000 autonomous AI agents worked on it at once and reached a solution in 88 hours, and its GPT-6 Astra system needed about 17 hours to verify it. OpenAI adds that an internal system more powerful than GPT-6 Astra handled the effort.

The claim sparked controversy. Tristan Buckmaster, a New York University mathematician working with a researcher at Anthropic, a rival, said OpenAI sped up after learning of their progress and worried that work stored in OpenAI's Codex might have been visible.

OpenAI's Sebastien Bubeck denied using the pair's work, though the firm said it cannot rule out that product data helped improve its models. OpenAI's proof suggests the fluid equations can fail under certain conditions, with values blowing up to an infinite speed.

The firm says it will not claim the $1m prize and is preparing for a flotation that could value it around $1tn.

The announcement follows other AI-in-maths claims from OpenAI in May and from Google DeepMind, and lands amid safety concerns after agents hacked Hugging Face during a cybersecurity test and US senators called for a permanent ban on AI "superintelligence".

Reading text adapted from reporting by **The Guardian***: "OpenAI claims to have solved maths problem...". Original article linked at theenglishwire.com.*

IV. COMPREHENSION QUESTIONS

1. How many AI agents did OpenAI say worked on the problem?
2. How long did GPT-6 Astra take to verify the solution?
3. What concern did Tristan Buckmaster raise about his team's work?
4. What does OpenAI's proof suggest about the fluid equations?
5. What wider context does the text give around the announcement?

V. DISCUSSION

1. Should labs announce breakthroughs before independent checks?
2. What duties do AI firms have when rivals use their products?
3. Is AI reshaping mathematics for better or worse? Why?
4. When, if ever, should governments pre-emptively ban tech?

VI. GRAMMAR FOCUS

Be to / be set to for official arrangements

Use be to or be set to to talk about official plans or scheduled events. Form: be (is/are) to + base or be (is/are) set to + base.

"The AI lab's next test **is set to** *begin on Monday."*
"Referees **are to** *read the paper before it is published."*

VII. GRAMMAR EXERCISE

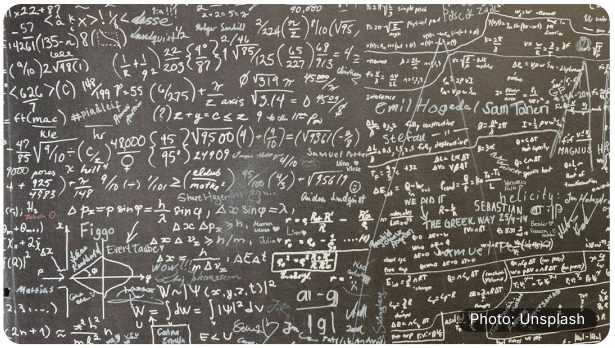
Complete each sentence with is/are to or is/are set to and the verb in brackets.

1. A formal review (follow) ___ the verification. _____
2. The regulator (review) ___ cybersecurity checks soon. _____
3. A hearing (examine) ___ the risks of AI agents. _____
4. The firm's shares (go) ___ on sale at the flotation. _____
5. Researchers (provide) ___ full data on the tests. _____

Teacher's Notes

TEACHERS ONLY

These notes are designed to help you get the most out of this lesson. Please do not share this page with students.


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I. LESSON GUIDE

- Timing: 8–10 minutes warm-up, 10 minutes vocabulary, 12–15 minutes reading, 12–15 minutes comprehension, 10 minutes grammar, 10 minutes discussion.
- Pre-teach names and references on the board (Navier–Stokes, Anthropic, Codex, Hugging Face) and concept-check equation, infinite, cybersecurity.
- Run a first silent read for gist (who, what, key numbers). On a second read, students underline evidence for each question and compare in pairs before whole-class feedback.
- Differentiation: stronger students summarise the controversy in two sentences including both sides; others focus on the technical result and the numbers before discussing.

II. DISCUSSION FACILITATION TIPS

1. Start with a quick poll, then pair students to give one benefit and one risk before sharing.
2. Prompt examples: hosting rivals' code, data handling, disclosure rules; ask for concrete policies.
3. If answers are general, push for a specific change in maths practice and one possible downside.
4. Split the room: one side argues for a narrow ban, the other for oversight instead; then swap.

III. EXTENSION ACTIVITIES

Debate: In teams, prepare and deliver a 2-minute case for or against claiming the $1m prize.

Writing: Write a 120-word press note from OpenAI summarising the result and addressing concerns.

IV. ANSWER KEY OVERVIEW

Comprehension questions: short factual answers from the text.

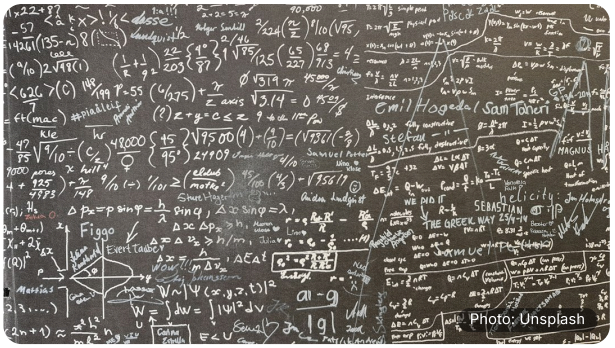
Grammar exercise: Be to / be set to for official arrangements

Discussion: open-ended. Accept any reasonable ideas supported by examples and reasoning.

Answer Key

TEACHERS ONLY

These answers are for teachers only. Please do not share this page with students.


Photo: Unsplash

IV. COMPREHENSION QUESTIONS

1. How many AI agents did OpenAI say worked on the problem?
   About 10,000 agents.
2. How long did GPT-6 Astra take to verify the solution?
   About 17 hours.
3. What concern did Tristan Buckmaster raise about his team's work?
   That work in Codex might have been visible to OpenAI.
4. What does OpenAI's proof suggest about the fluid equations?
   They can fail, with speeds blowing up to infinity under some conditions.
5. What wider context does the text give around the announcement?
   Earlier AI-in-maths claims, a planned flotation, and safety worries after a hacking test and a call to ban superintelligence.

V. DISCUSSION

Open answers. Accept any reasonable ideas supported by examples and reasoning.

VI. GRAMMAR FOCUS

Key point: Use be to or be set to to talk about official plans or scheduled events. Form: be (is/are) to + base or be (is/are) set to + base. (Examples constructed.)

> *"The AI lab's next test* **is set to** *begin on Monday."*
>
> *"Referees* **are to** *read the paper before it is published."*

VII. GRAMMAR EXERCISE

Complete each sentence with is/are to or is/are set to and the verb in brackets.

1. A formal review ___ the verification. **is to follow / is set to follow**
2. The regulator ___ cybersecurity checks soon. **is to review / is set to review**
3. A hearing ___ the risks of AI agents. **is to examine / is set to examine**
4. The firm's shares ___ on sale at the flotation. **are to go / are set to go**
5. Researchers ___ full data on the tests. **are to provide / are set to provide**