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OpenAI and Anthropic both say their models refuted a 27-year-old complexity assumption, and experts are still checking. Also: a reread of Anthropic's S-1, cracks in AI capital markets, a run of security breaches, and where private money is going in hardware and agent-native software.

AI-for-math moves from benchmarks to contested research claims

OpenAI says its model found an algorithm that breaks the Exponential Time Hypothesis (ETH), the 1999 assumption that 3-SAT can never escape some fixed exponential growth rate. About six hours later, Anthropic published its own proof, written by Claude using tensor networks. Both labs say the discovery happened on October 16, both papers come with Lean proofs, and Anthropic says the core algorithm took 14 million output tokens and no human input [1]. Anthropic's paper counts more than 800 papers that rely on ETH or its stronger version [1].

The practical impact is small. The result does not solve P vs NP. Anthropic's proven speedup only beats brute force once the number of switches has more than 10,000 digits. MIT's Ryan Williams calls it a "claimed refutation" and is helping organize an open review with the two researchers who first proposed ETH [1].

The wider record calls for caution: - **Navier–Stokes**. OpenAI's claimed blow-

up proof covers the version with an external force. OpenAI says it won't seek the Clay prize. Three researchers argue the Lean proof doesn't match the written proof [1]. Sam Altman put the cost at roughly \$10M [1]. - **The 722-manuscript release.** About 42% of the main results have Lean proofs [1]. Three papers were withdrawn after a sign error, and 14 more were revised [1]. - **Siegel zeros.** Terence Tao called the OpenAI result the biggest advance on the subject in 50 years [1].

For investors, frontier labs can now produce verifiable research at scale, often with machine-checkable proofs. How much of it holds up varies widely, and human verification is now the bottleneck.

Anthropic's S-1: the scary numbers are mostly accounting

Altimeter's Jamin Ball, whose firm is an Anthropic investor [2], argues two headline figures are misread: - **The \$109B of "convertible notes payable" is not drawn debt.** It reflects roughly \$6B of outstanding Amazon and Google converts, valued at today's share price [2]. On that reading, \$141B raised against \$134B of cash implies about \$7B of lifetime burn [2]. - **The \$81B H1 net loss is a mark-to-market charge, not operating losses.** \$72B comes from Amazon's notes, which convert at \$2-5 a share, and \$9B from forward commitments to sell Series G-2 at \$259 a share while Series H priced at \$589 [2].

His figures: 85% gross margin and 21% FCF margin in H1, 8% FCF margin after subtracting stock comp, and an 8% GAAP operating margin in Q2 [2]. He expects profitability to turn negative as Anthropic ramps compute, and says this is his guess [2].

Signs of strain in AI capital markets

- **OpenAI** has raised less than half of the \$30B it targeted for its latest round, per WSJ [3]. That contrasts with last period's bullish \$1.25T pitch.
- **The "rack spread."** a16z reports that since mid-July, B300 GPU rentals are up 106%, B200 up 66% and H100 up 17%, while average token prices are down 58% [4]. Companies that rent compute and sell tokens are getting squeezed on both sides.
- **Enterprise AI spend** averages \$1,024 per employee, nearly double last year, per a16z [5].
- **Alphabet** lost about \$500B in its worst day ever. Yet Google Cloud's Q3 backlog is \$561B, and just over 55% is expected to be recognized within 24 months [6]. On All-In, the bear case was search ad clicks under pressure from answer engines. The bull case: Cloud doubled to \$30.7B, and its operating income rose from \$3.5B to over \$11B year over year [7].

Seat-based software gets repriced, and agent-native companies get funded

Salesforce agreed to buy Braze for \$5.66B, or 6.8x trailing revenue. That is a 58% premium to Braze’s 3.7x market multiple [8]. Braze, Klaviyo and CrowdStrike all grew 26%, yet CrowdStrike trades at 42.6x and Klaviyo at 3.1x [8].

SaaStr’s explanation is that agents shrink per-seat revenue, while usage-billed infrastructure and security earn more as agents do more [8]. Private rounds point the same way: Clay at about 35x revenue, Sierra over 100x and Rox about 150x. None of them sells seats to human reps [8]. SaaStr expects more strategic and PE takeouts of 2–3x GTM companies [8].

Supabase is an example on the infrastructure side. It has 13M users, launches over a million databases a week, and gets roughly 70% of new activity from agents [9].

Security: AI-found bugs, leaked exploits and supply-chain risk

- **PHP2Shell.** The PHP flaw found with GPT-5.6 Sol, and independently by Wiz, was exploited before disclosure. AWS saw an attempt on October 17, four days early, and it’s unclear how the attacker got the exploit details [10]. Cloudflare saw millions of attempts within hours of the patch [10].
- **Railway.** The platform said decrypted customer secrets may have been exposed. Deployments were paused for close to 20 hours, so customers couldn’t safely rotate keys [10].
- **Binance.** About \$6.3B left its wallets, and roughly \$2.7–3B has been frozen. The root cause is still unconfirmed: Binance first blamed a laptop, then “additional points of breach.” North Korea attribution comes from TRM and Chainalysis only [11]. Amjad Masad alleges an official Claude Code extension was compromised. He raises a Binance link only as a question [12].
- **Agent skills.** One developer scanned 7,728 public Claude skills. Of 60 flagged and reviewed by hand, 30 were real threats, and 13 of those read private keys or saved logins [13].

The opening for founders is in agent sandboxing, patch automation and agent identity, which follows last period’s CISO-budget data.

Hardware and physical AI rounds

- **Bedrock Robotics** raised \$600M. It sells self-driving kits for excavators, is two years old, and has begun commercial operations [14].
- **Rebuild,** the Massachusetts manufacturing incubator founded by ex-Amazon executive Jeff Wilke that spun out Slate Auto, raised \$2.1B. General Catalyst led, and JPMorgan’s strategic investment group joined [14].

- **Kalshi** reached a \$40B valuation [15].
- **Lightberry (YC F25)**: YC calls it the only US humanoid company able to ship robots using an existing supply chain [16].
- **China humanoids**. China says it built 40,000+ humanoids in H1, but shipment-based counts put global H1 shipments at 19,100–25,000 [17].

Early-stage notes

- **Subvocal** raised \$1.3M from YC and Afore. Its glasses decode silent mouthing into text at more than 200 words per minute, and pre-orders are live [18].
- **Eve** pitches plaintiff-law automation from first call to settlement. One firm reportedly went from about 100 to 500 clients per attorney [19].
- **YC’s Early Access Network** introduces 30 companies to 100+ enterprise leaders months before Demo Day. It is now part of every batch, and W27 applications close November 2 [20].
- **Radical Numerics** says a patient received viruses designed by its Omni-1 model to treat a drug-resistant bacterial infection [21]. The claim has not been peer-reviewed [22].

Sources

1. AI is Solving Math’s Hardest Problems!
2. Clouded Judgement 10.30.26 - Dispelling the Myths of the Anthropic S-1
3. X post by @WSJTech
4. X post by @a16z
5. X post by @a16z
6. r/artificial comment by u/bartturner
7. Anthropic S-1 Shocker, Greatest Business Ever? Google’s \$500B Wipeout, Midterm Predictions
8. The B2B Category the Markets “Hate” the Most Today: GTM
9. X post by @ycombinator
10. The Pulse: Time to rethink software security because of AI?
11. r/SaaS post by u/Aman_85m
12. X post by @amasad
13. r/SideProject post by u/123Xrp
14. Anthropic’s IPO filing puts the AI business model to the test | Equity Podcast
15. Big Tech Defied Tradition With a Risky Bet on Trump. It’s Not Looking Like a Winner.
16. X post by @ycombinator
17. r/Futurology post by u/mawcopolow
18. X post by @AarushYadav47
19. X post by @a16z
20. X post by @ycombinator

21. r/Futurology comment by u/Gari_305
22. r/Futurology post by u/Gari_305