

MATH OUTSIDE THE BUBBLE



A Stand-Up Makes a Math Joke...and It Lands

Sophia D. Merow

In the context of a calculus class, says John Allen Paulos, the following “might be considered amusing”:

Person X: What’s the integral of $1/\text{cabin}$ with respect to cabin?

Person Y: $\log \text{cabin}$.

Person X: No, houseboat; you forgot to add the C!

Crack a joke before a more general audience, however, and “almost any bit of math is likely to be too much,” warns Paulos, the author of *Mathematics and Humor*. “Even Pythagoras is liable to be understood as a skin condition.”

The math community at large seems to share Paulos’s dim assessment of a math joke’s chances. For when evidence surfaced in April that an algebra-based bit of stand-up had been delivered outside academe and elicited neither groans nor glazed-over eyes but *laughter* there, Math Twitter was taken aback.

“Unexpectedly solid math joke!” wrote University of Wisconsin’s Jordan Ellenberg when he retweeted a video of Darryl Charles explaining to a comedy club crowd how binomial multiplication pertains to the emotional roller-coaster triggered by news from the White House.

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Figure 1. Darryl Charles delivers his FOIL joke.

“Bravest act by a comedian in any of our lifetimes,” opined Desmos¹ Chief Academic Officer Dan Meyer: “pinning the punchline of a joke to an adult crowd’s recollection of FOIL.”

If you haven’t already, you should watch the YouTube video (<https://bit.ly/2LXnhRt>) of Charles delivering the joke—his timing and body language add dimensions to the comedic effect—but in case you’re reading this in an internet dead zone (or a library without headphones), here’s the text of it:

¹With its free online graphing calculator and hundreds of digital activities, Desmos aims to “help every student learn math and love learning math.”

So I figured out the algorithm to how we all respond to Trump news. Yeah, sorry to bring him up. But it's math.

And the algorithm is disappointed plus surprised squared. That's how it works. And it works out, because if you use FOIL, you realize that you're disappointed that you're disappointed, then you're disappointed that you're surprised, then you're surprised that you're disappointed, and then you're surprised that you're surprised. That's how it works—every time.

Charles traces the joke's genesis to a phone conversation with a friend about "the Trump screw-up that particular day." "I said something to the effect of 'my disappointment and surprise are compounded each time,'" he recalls, "and it went from there." The joke made Charles laugh when he thought of it, and he figured that most high school graduates would have some memory of FOIL. Still, when he debuted the joke at a comedy club open mic, he was pleasantly surprised by the positive reception.

"It got an applause break," Charles says, noting that open mic audiences, often populated primarily by other comedians awaiting a turn, can be tough. "When that happened, I was like, 'Wow, I might have something here.'"

What Charles had was a math joke that works on multiple levels. "It sounded from the audience reaction that it was widely accessible," says Cornell's Timothy Riley (who, educated in the United Kingdom, hadn't previously heard of FOIL). "Just some hazy recollection of the algebra suffices to get the gist."

Mathematicians consulted for this piece decried FOIL's limited usefulness and mourned that the mnemonic may well be one of the few tidbits students retain from high school math. They also, however, appreciated Charles's joke from an abstract algebra angle.

"The joke immediately causes me to start wondering what type of ring he might be working in," says Olivet Nazarene University's Justin Brown. "And I was pleasantly surprised that it is noncommutative, since he makes it clear that the order of surprise/disappointment makes a difference."

"A big part of the beauty of this joke is that he's describing a noncommutative multiplication," agrees Berry College's Ron Taylor. And Charles's addition isn't commutative either, Taylor notes: What Charles describes is a kind of sequence of events where each term in the sum seems to follow from, and depend on, the previous reaction. "I have found myself wondering how much higher math Darryl Charles knows and if he understands that he's got a really nice example of a noncommutative operation," says Taylor.

Charles does, it's safe to say, have a meatier mathematical background than the average comedian. He studied electrical engineering at both the undergraduate and graduate levels, and worked as an engineer before pivoting to

pursue comedy full-time. Charles's formal education in mathematics left him with a multifaceted appreciation of the discipline. Not only is "the logic and 'neatness' of numbers...very satisfying," he says, but problem solving is an invaluable skill beyond the classroom. "The biggest benefit of STEM is to teach people how to think rationally and independently."

Math crops up in Charles's comedy because his life experience informs his work and math has always been a "huge part" of his life ("You could say it's integral," he quips). But another connection exists, Charles says, in that the analytical side of jokes is a bit mathematical. "You're constantly trying to take things apart and explore why things are the way they are, or make fun of them for being so," he explains. While deconstruction and attempted explanation are generally encouraged in school, the impulse to poke fun got Charles in trouble as a student. As a comedian, of course, it's his job.

Asked to respond to Taylor's musings about his awareness of noncommutative operations, Charles replied this

A selection of math jokes cited by mathematicians consulted for this column (with their commentary in quotes):

1. *Adult: What's the biggest number there is?
Child: [Thinks for a while]...367.
Adult: That's a big number, but what about 368?
Child: I was close!*

"It's ridiculous, but profound." –Tim Riley

2. *Q: What does the middle initial 'B' stand for in Benoit B. Mandelbrot's name?
A: Benoit B. Mandelbrot*

"My single favorite math joke of all." –Andrew Kern

3. *Once, a mathematician, a biologist, and a physicist were sitting in a sidewalk cafe when they noticed two people going into the house across the street. A while later they saw three people coming out.
The physicist says, "Our first count wasn't accurate."
The biologist concludes, "They must have reproduced!"
But the mathematician says, "Now if exactly one person enters the house, it will be empty again."*

"I like jokes that seem to highlight the strange ways that people think in mathematics." –Justin Brown

4. *There are 10 types of people in the world: people who understand binary arithmetic, people who don't, and people who weren't expecting this joke to be in ternary.*

"I want to be clear that I didn't make this one up. I just really wish I had." –Ron Taylor

way: "I was absolutely thinking about the noncommutative property of F.O.I.L. in my joke. When I reference something like a STEM concept in my jokes, I really do try to fully honor that concept."

Charles's album "Black Gentrifier," which includes the FOIL joke, is available at darrylcharles.bandcamp.com. "And feel free to follow me on the internet," says Charles, "so I can leverage those numbers into more gigs."



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Credits

Figure 1 is courtesy of Dorian Vasquez and Lemaire Lee. Author photo is by Igor Tolkov.



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