JASON: I can still smell it on me. I took two showers.

JULIE: I don't think I ever smelled bad, so you must have something really wrong.

[MUSIC PLAYING]

GUEST SPEAKER: Last time on 5.301, the students made seven slightly different versions of penicillin. Today and tomorrow, they'll be testing which one is best at killing bacteria. They do this by adding seven different amounts of penicillin to a constant number of E. coli in seven tubes. The bacteria will be incubated for 24 hours, and then the students will measure how much bacteria is left in each tube. They'll plot a graph of bacterial concentration versus penicillin concentration. This is called a killing curve. The steeper the killing curve, that better the antibiotic.

GUEST SPEAKER: Don't sneeze or anything.

ETHAN: 7.0 milligrams of this, and I don't want to lose any of it.

LINA: I think we're doing really well. We're being so careful. Everything's working out perfectly.

GUEST SPEAKER: After a bitter battle over the biggest crystal, Jason and Julie have made up.

JASON: She did it. She probably spilled it so like, OK, I have an excuse to clean up this and get away from Jason. I didn't say anything.

JULIE: What did he just say about me?

JASON: She hates me.

She loves me! Well, she didn't want me to say that.

LEALIA: I think we're almost done.

YI-SHIUAN: We're done.

ANTHONY: You're an awesome partner.

TENGFEI: So tomorrow, we're going to see which tube the bacteria grows and which tube the bacteria dies. If they grow, the culture will become cloudy.

GUEST SPEAKER: The next day, all the students have to do is measure how many bacteria are in each tube.

PROFESSOR: This is how, when you make a drug candidate, you can gauge how effective your drug candidate is.

GUEST SPEAKER: To do that, they use a spectrophotometer, which shoots light through the sample at a detector on the other side. If there are a lot of bacteria, most of that light is scattered in random directions and never reaches the detector. If there are very few bacteria, most of the light makes it through.

GUEST SPEAKER: Trying to find the line that fits the data well.

LINA: It feels great, because I actually know what some of these things are. At the beginning I had no idea, so I was asking around the entire time. So I've learned something during three weeks.

ANTHONY: 0.45.

GUEST SPEAKER: The students plot the results on the white board and discuss whose penicillin is best.

GUEST SPEAKER: How are the results?

ANTHONY: Did I win?

GUEST SPEAKER: You tell me who wins.

GUEST SPEAKER: I win!

GUEST SPEAKER: Which is the best?

GUEST SPEAKER: Yeah, Anthony's.

ANTHONY: Mine.

GUEST SPEAKER: Today is the students' last day in the lab. Tune in to the next episode to see how 5.301 wraps up.

GUEST SPEAKER: Just imagine if you had a president that was a bachelor, or if you had a president with no kids. I think that we're going to have a gay president before we have one that doesn't have a spouse. Unthinkable.

[MUSIC PLAYING-"HAIL TO THE CHIEF"]

GUEST SPEAKER: Wait, was he?

GUEST SPEAKER: Yeah, he was.

GUEST SPEAKER: He didn't have a wife?

GUEST SPEAKER: Nope.

GUEST SPEAKER: Oh my god, I'm so stupid. I should definitely fact-check before I talk.