1 Weverton: So My first question for you is, Can you tell me what motivated you to pursue a PhD in mathematics?

2 Kate: um, I would say that my motivation came from my career goals. So I knew that I enjoyed math for a long time. And I wanted to have a career like that used Advanced Math. So I just kind of knew, going in that having a masters or a PhD was pretty important to be qualified for the jobs that I'd want, like in consulting, or just like being a general researcher in industry or something.

3 Weverton: And When did that motivation happen? Like when you fought? Like, why should the math because of my career goals, like when exactly in your life that happened?

4 Kate: So Can you say it again, one in my life did it like become clear that that was my career goal? [interview: yes] Okay. Probably, like my first year of undergraduate.um, I really enjoyed like the advanced math classes that I had taken, but I, I knew that there's like, there's just more, and you weren't going to be able to get, like all the information just from a bachelor's degree.

5 Weverton: Cool. And so when you started college, Did you have a major define and like, declared, or like, how was it? Did you go to college for mathematics? Or you went just for like, undecided major, like?

6 Kate: yeah, I applied to undergraduate as a math major. So I knew going in that I wanted to do that. I think, maybe a year or so before I was debating between math and physics. And I think just after visiting the schools, I was like, I like the math department better. So I just went with math, and never looked back.

7 Weverton: was a specific reason why you prefer the math department?

8 Kate: I did well, I had experience with the people on charge of the physics department too. But I would say that the head of the math department took like a stronger interest in being like, Oh, you, you can do a research project, you know, now. And I just like that structure better.

9 Weverton: Cool. And can you tell me about the strongest feeling you have experienced as a mathematic student?

10 Kate: The strongest feeling is that means either positive or negative. I guess the strongest was last semester when I thought about quitting. Because the first not last semesters, my first semester in grad school, so two semesters ago, It was just, it was just a harder transition than what I expected. So like from going high school to undergrad, there wasn't really much change, I don't think. But then undergrad to graduate school is just a lot tougher. I realized, like I didn't have as much of a background as I like my high school background in math was really good. So undergraduate was pretty easy. And then my undergraduate background, it wasn't bad. I think it was just average. And so I didn't have that feeling of like being a head anymore. And so that was kind of hard to deal with. So it's just kind of feeling like, Oh, I don't know if I have what it takes to stay in the program. But I'm still here.

11 Weverton: I see. So the difference came just because of like, knowledge, like, certain contents?

12 Kate: Yeah. I guess specifically like for real analysis. So I start that was, I started in the qualifying level real analysis. So there's like a bridge class that you could take before. And I just, I chose not to, because I thought I would be okay. And So yeah, so that kind of gave me strong feelings, I guess. Maybe inadequacy, or just perceiving it that way?

13 Weverton: Do you think you overcame those feelings?

14 Kate: Uhum, Yes, I think so. I've had a much like better experience and a lot more confidence in the past, like after that. So last semester, and this semester is going well.

15 Weverton: Nice. and, I want to try to see something about these questions to you. Yeah let's jump, Okay, so, Can you recall the last time you talked to someone about being a PhD in mathematics?

16 Kate: Just anyone in general? I talked to my grandma. I think it was two days ago, cuz she she's asking me about, you know what I do? And so I just kind of explained kind of the stages of getting your PhD.

17 Weverton: And, So yeah, what I want to answer about the first question was that you talked about something that he felt like it was a negative, strong feeling was there like any positive strong feeling that you ever felt as a mathematic student?

18 Kate: Yeah, for sure. Probably, this semester, is just still having hard classes, but enjoying it and being able to, you know, do the homework better. So is this just feels more positive? Because like, the first semester was so like, hard. And so like, in comparison, it feels a lot better now.

19 Weverton: I see. And so if you meet up with a student, and the student was thinking about taking a Ph.D. in math, What advice or experience could you share, to help the student to make up their mind?

20 Kate: I would say, just like going to undergraduate that you should have a reason to go to school. um, Sometimes it can be harder to, you know, say no to graduate school, because if you're being paid to be there, It's kind of like, oh, why not. But I think it's important to have like, a reason why you're there not just Oh, it's in the same, It's like the easy track to just stay with the academic route and go straight from like, a bachelor's or from a Masters into a PhD. Some really good advice that I got, I'd probably like pass along to someone else's, that The hardest thing about being a PhD is just not quitting. So It's not about being like the smartest, but if you just keep staying in the program, you'll get it.

21 Weverton: Not quitting, nice. And so what would there be any experience you could share with these people? That you had?

22 Kate: so far, um, I guess probably with the real analysis part just don't, don't underestimate what you can do. But you know, just keep in mind that it's, I might be a bigger transition, because I think it's common to have like, being a high achieving high school student, doing pretty well in your undergraduate degree and deciding to go to graduate school. And it just might be a little bit harder if all of a sudden, like living by yourself, or you have an apartment. So there's like, personal changes, and also academic changes. [interviewer: nice] Can I add something to another answer about the strong, positive feeling? Does it have to be from the graduate program or like an undergraduate?

23 Wevertonm: or it could be any time?

24 Kate: Okay. So I remember one really good positive thing was, was maybe October, November of my first year in undergrad, I gave a conference presentation. And it was at a women's conference, undergraduate women in math conference. And I was like, Great place to do like a first talk. And it was just really encouraging to have, like good feedback. And like, people were asking questions, and it was just really fun to tell people about a different areas of math. And although like, It's not like communicating math to the general public, but you're still presenting something fairly new that most people didn't have a lot of background in. So..

25 Weverton: Why do you think that was a good place to start?

26 Kate: I mean, I was comfortable there. So there is around women. So let's, it wasn't a huge conference. So I mean, that my presentation, I think there were probably maybe 30 40 people there. A small group of people from a university I went to so it like, it wasn't just me and like a, like a couple professors. So that was nice.

27 Weverton: And um, I'm trying to understand, Do you know why they have this like conference for women in mathematics, specifically?

28 Kate: They had it, I think they applied for some sort of grant and got the money to put on this

conference, because it went, It happened my first year in undergrad, but then it didn't happen my second year, because their grant funding had run out. So they didn't have it. The next year. It was called the Southeastern Conference for women for undergraduate women in mathematics. And one of the professors who was in charge of the math club, He told people about it, and I got a group to go.

29 Weverton: Nice. So now, I want to know a little bit about your PhD. So I would like to, I would like you to describe for me one class you took during your PhD. And I want to know, just basic descriptions about the course, how it was like, how did you prepare for the course? And Yeah, just very basic.

30 Kate: Okay, any course in particular, like,

31 Weverton: could be any, anything that you like.

32 Kate: anything? Oh, and then I liked, Okay [maybe you didn't like]. I liked complex analysis, I took that last spring, I didn't really have any preparation. I didn't take complex analysis and undergrad, and I knew a couple people have. But I didn't feel bad about that. I figured I'd just catch on. See, it had like, maybe it was close to weekly homework. And then I have like a small group that I typically do homework with. So, I don't know, maybe a couple hours a week we'd work on it together.

33 Weverton: Can you tell me more about a group like maybe, howndid that group look like., who were involved?

34 Kate: So It's all a second year grad students. So the people that we came in with their first year, they, most of them took the bridge classes in analysis and algebra going in. And I took the bridge class and algebra. So that's kind of how we got together, we would do the algebra homework together. And I think all of us want to do applied math. So also, like this semester, our schedules are still pretty lined up. And So we still do homework together. Let's see. What else about?

35 Weverton: So these bridging math courses? Like, who usually take those courses? what are the ideas of those courses?

36 Kate: It's typically for incoming graduate students. But I think some undergraduates here it can take them. I'm guessing if they're going to come to Frank University and they want like transfer credit. Yeah, so it's pretty much only the the first year PhD students may be masters students, because it is on the require, It is a possible requirement for people getting their masters.

37 Weverton: And about complex analysis. Was there any memories that stand out in terms of interacting with the professor That was teaching a course?

38 Kate: I went to his office hours, maybe a couple times that semester, nothing really out of the ordinary, He was a great professors like his teaching style I really liked and I enjoyed all the lectures, but nothing really like one on one that was anything different than like another professor.

39 Weverton: And How is that teaching style? How do you define that teaching style?

40 Kate: Maybe in narrative, So more, I mean, mathematics is very formal. So it's nice to have, like the big picture like narrated to you, and it kind of helps piece things together.

41 Weverton: And If you were to rank that class, will you see was a really good class, maybe a bad class and an average class, how would you rank it?

42 Kate: I think it was really good. Again, I don't really have another complex analysis class to like, compare it to. But I mean, it was really well put together, you know, compared to other graduate classes, and it was very, like straightforward. And you knew what to expect.

43 Weverton: All right. Can you tell me now about a course that you took that you felt like he was average? Or maybe bad?

44 Kate: Yeah, um,

45 Weverton: And you can compare with the complex analysis one. because that was good. So you can tell me something?

46 Kate: Yeah. Probably abstract algebra, just because the The topic is. I mean, it's difficult. And it's not really my area that I want to focus on afterwards. The professor teaching it is, I mean, you know what to expect, but he expects a lot. So, like, the homework is always really long. The tests were very long. And some, so some of it was very, like memory dependent. Like for the test, Maybe 40% you've seen before. And so you want to write down those really quickly to get to the next ones. So time was timing was hard with that class for like, for exams and things.

47 Weverton: And how did you prepare for that course?

48 Kate: I took the bridge class for algebra. So The next one was the qualifying level algebra. So that helps a lot, since a lot of the homework that we did in bridge algebra was, there is some overlap at the beginning for the next algebra class. So that was really helpful.

49 Weverton: And during the semester, Did you have like a studying group as well, we're taking it like with peers?

50 Kate: Yeah, it's the same group that I was hanging out earlier. So we all went from bridge algebra and took qual level algebra together.

51 Weverton: Nice. Any memories about interacting with the professor that was teaching a course?

52 Kate: Yes, I remember going to office hours. And It wasn't that helpful.

53 Unknown Speaker

54 So you'd ask a question, then he kind of like you are, I don't know, like square four. And then he'd like push back to square one, and go, like build back up? And still maybe not answer your question once you got to like where you were asking the question. So that was kind of frustrating. His lecturing was very, like, you could read the book and kind of have the notes in the same way. Yeah. But you felt bad for not going because it was such a small class, like here. It was noticeable. You weren't there. So like, we couldn't all just skip.

55 Weverton: He would know you were not there [interviewee: yeah]. And do you think other students also felt the same way about that class in particular?

56 Kate: I think so. And we had like conversations about it. being like, Oh, do you want to go to office hours? No, I think we'll just look it up online kind of thing. And like talking about how the exams went. And I think we all had pretty similar feelings about it. And they kind of lined up with what the older students told us as well with that, Professor.

57 Weverton: Okay. So I think you started talking a little bit about some negative experiences you had. But was there a moment you felt like you did not belong to this program?

58 Kate: No, I wouldn't say I wouldn't say so.

59 Weverton: So You always felt like welcomed, I am okay in this space, I can do is, it was something that felt like I don't belong?

60 Kate: No, I don't think so a lot of, It's not like everyone I came in was from like, you know, Ivy League universities. So it's like, you know, we're, we're chosen here for a reason, because they think that I can finish and so yeah, I just bought into that, like they gave me they give you money, it means that they have some belief that you deserve to be there. So I should believe it too, if they believe it.

61 Weverton: And So was there a particular moment that you felt like I belong to this space? Like, and how did that play out?

62 Kate: I took the qual like qualifying exams in August. I don't know if you like, the structure of it is.
63 Weverton: Yeah, people told me a little bit, but you can go?

64 Kate: No, it's fine. I just didn't want to repeat anything that you already knew. But Yeah, so I took the qualifying exams, and it felt really good to get the results. So I passed three of them. And so it felt really good. And I was like, that was kind of like a validating moment that that I have like the capabilities to to keep going.

65 Weverton: And so after how long? How long did it take you to pass those exams?

66 Kate: So That was my first attempt, Most of them. So the, when I came in for the first year, you're allowed to take qualifying exams is like, a free a free one. So it doesn't matter. Like it doesn't count against you, if you fail the exam [interviewer: so everyone takes it or no?] not everyone, so you just decide. So like when I was a senior in undergrad, they sent like an email Frank University sent me an email. And they're like, do you want to take any qualifying exams? If So, you know, let me know. So we have you on the schedule. And then so I chose to take probability. I didn't pass that one. But that's fine. And so then you're allowed to, they're given every August in January, so I didn't take any January of my first year. But I took four of them August. So like the most recent like August that just happened.

67 Weverton: Nice. So that's aafter one year in the program [interviewee: yes, after one year in the program]. All right. Can you, oh, Another question? So what are you thinking about doing after your doctoral program?

68 Kate: I'd like to be a researcher in industry or some kind of consulting position, maybe I've considered like the financial sector, going in that way. Also, like an economic route, as in, like, policy kind of research, and things like that.

69 Weverton: And What attracts you to the researcher job?

70 Kate: I, I think it would be a very fulfilling thing to do. And also just to show people that math matters beyond, you know, like, what you learn in high school or, or middle school. Because a lot of times people see like, oh, after calculus, there's just nothing. It's like, now you know, all the math there is. And it's definitely not true. And there's, you know, you don't use the quadratic formula every day. But there is math that goes on when you want to, I don't know, like models, something that like an airplane, you could talk about, like aerodynamics, or things like that.
71 Weverton: So people complain with you about not using the quadratic formula After High School?

72 Kate: a lot of like, family and some friends that are, they're like, Oh, well, you don't really use it, or the most common reaction is like, Oh, I hated math. So they just don't think about math ever again.

73 Weverton: So, um, so you talked about the comfort you felt in the conference? And I'm kind of, and one of the reasons why that happened. It's because said he was like, you know, women's conference, it's I felt more comfortable. It was around women [yes]. How do you feel when you were in this department? Like, like, are those feelings like those concerns that you had back in that undegraduate conferences still around like, is the feeling like, about discomfort?

74 Kate: I would say, Yeah, I would say in the real analysis class that I took, I normally sit at the front of the class. So one time I was like, looking around, and I was like, oh, there's like two other girls here. And I didn't have like, I didn't have a strong like friend group yet. So I think that might have, like, contribute to feeling a little bit more isolated, like in those few weeks and stuff before I found

like, a group of people to be around. But It wasn't like, feel I didn't belong there. But it was just a diff. It was just different. Because even in undergrad, I know, it's not very common. But I was like a lot of my upper level math classes were full of women, usually even like more than 50%. So it was just, I expected it, but it still felt weird. Like when I realized it.

75 Weverton: And in the undergrad, all these women studied math for they all liked math major, or

76 Kate: Yeah, they were all math majors.

77 Weverton: Oh nice. Cool. So you mentioned about your a strong group, It feels like you have a solid group here. Can you talk? To me? I think that's the same group that like you describe this people coming in together? Right? So like, Can you describe that group with more detail? Like, how many people in that group?

78 Kate: Oh, sure. Like, so there's usually around five of us. And then it's not really like the fringe of them. But like not everyone's schedules, of course lineup. So there's people you just spend more time with and less time with. But the people I spend the most time with it is So there's two other women in that group. And then the rest of the people that kind of like come and go are our guys.And we all just usually share one or two classes. One assignment, we don't always do math so it would be Like, we play card games, usually for like 15 or 20 minutes. Most days just to like, have something to do that's not math. So that's really nice. I know everyone's like, comfortable around each other like we joke and things.

79 Weverton: Nice, and That might be a harder question, Or maybe not. So What do you think is a typical day in the life of a strong student? In your program? Can you describe how that day would look like? things they would do?

80 Kate: I feel like the where they are in the program matters. So like, before you pass all your qualifying exams, I would say like a strong student. It also depends if they're ta or not. I guess outside of like, teaching their class or taking their classes. I mean, they would do homework. I know, some people like do their homework the day before it's due but I'd say like successful students will be more on top of it. Also, like, already thinking about who they'd want to work with. And then like, once they're past the qualifying exams, They would probably like, it's probably a lot more reading, because you're reading through books and papers, and things like that, it's less emphasis on like, give, get all of this homework done, pass all of these tests for the class. So like, your comprehension isn't on like, a strict time frame. So I'd say to be successful, you'd have to be really like disciplined, at least in being able to do reading and like try exercises on your own when you don't have, you know, 20 other people in the class doing it with you. And then thesis stage, I'd say someone success, someone successful also just does things not in the math building. Like just have extra curricular things to do. So you're not only thinking about one problem per seven hours a day, And then eating and sleeping, and then doing the same thing again. I see successful people have hobbies and other things to distract them for a while for going back.

81

Weverton: So you're talking like about these not only doing things in the Math building? Does that mean like? Could they be engaging in other academic activities? Are you seeing more like a social life outside of the university? Like what exactly?

82 Kate: oh I, it is more like in a social sense.

83 Weverton: And you mentioned about not being a TA, or being a TA, like how does that impact?

84 Kate: so just your time, my first semester, I was, I was a TA for calculus two. And I decided to take three classes, which I probably should have just done two. But I did three classes, and I was teaching and it was, everything was new. And It's just teaching isn't hard. It's just time consuming. It's more taxing like, I don't know, like you're dealing with students problems, not just how do I

solve this like homework question. So It's not hard, like, from having the knowledge to do it. It's just, you know, always getting emails and trying to stay ahead of the schedule and trying to just be prepared. And So normally, you can't take as many classes as your peers who don't have to teach. So, john, he's in the, like, the study group of people he's teaching. And so you just see, like, it's hard to balance everything. So it's much nicer when you don't have to teach and you get a little bit more downtime.

85 Weverton: Nice. So can you tell me about a mathematician, you know, in your department that you admire?

86 Kate: I think, I don't know the faculty that well. But I do admire the professor who taught me real analysis, even though I didn't like the class, I think he is a really great, really great professor, I think he's really actively involved in things that happened. He's like always traveling. And I know that he do the name is, Do you want a name for him? Okay. He's traveling, I know that he has some part in a program or people that deal with, like, kidding. Talking about math to like, middle school age, early High School. He's also Latino. So I know, he also like, you know, talks about he's, you know, an advocate for just diversity in the program. He just seems like a very fair person. So Yeah.

87 Weverton: so when you describe him as a great professor, Is it related to mathematical knowledge? Is it related to being a nice person, is it related to being a person who advocates, how do you see this great professor, or is he all together? How do you see it?

88 Kate: Maybe first knowledge, because he is very knowledgeable. And he also keeps in mind application. So like, when he is teaching, It was all, like theoretical, and he'd occasionally, you know, like, bring it back down to earth, Some application things. And so I appreciated that part.

89 Weverton: And Why do you think the average PhD student decide to pursue a PhD?

90 Kate: Because probably because they have to, if they want to be a professor, or at least a professor at a research institution. I know that sounds like you could be a professor, sometimes with the master's degree, at different colleges depends on what college you want to go to. But I'd say most PhD students are looking at research institutions, and academic positions in those. So it's just, it's necessary, They also enjoyed it. Like, I mean, the average PhD student does enjoin or else they couldn’t be here. Or it would be very difficult to stay. And if you didn't enjoy it, Be enduring a lot.

91 Weverton: Nice, And if you're accepting a student to mentoring math, what qualities that student would have?

92 Kate: I think it would be nice to mentor someone who came from like a similar undergraduate school, like a mid size school, or at least a medium sized department. Just because like, the way you interact with professors, and the way you interact with your peers, at that level, I think is different than if you're, I mean, like the math department here, the undergraduate math department here, You don't really hear anything about under, like what undergraduate students are doing. And like that definitely wasn't the case at my undergraduate school. So I think relationships are just kind of different, Like with professors, When you come from a smaller, large school. So I think that that'd be something like valuable to give to a mentee is to be able to talk about the transition.

93 Weverton: So, um, so I'm trying to understand this relationship, you, I mean, the relationships you're doing. You're connecting things with the undergrads here, too, right? And then the grads from where you came from, Right, Is that right? [yeah] and, So do you think there is no like, connection between like grad students and undergrads at Frank University.

94 Kate: there's a little bit. So I'm in AWM, which is the Association for women in mathematics. And I do know that our our president this year, has done a much has done much more than last year to involve undergraduate math students and some other undergraduate because I think they're engineering or biology students. And also trying to do something together with the undergraduate

math club that they do have here. To have more interaction between the math grad students in the math undergrad students. There haven't been any events like recently, I just know that she has plans to do that this year. But other than that, I don't really see much.

95 Weverton: Can you tell me more about this Association? Like maybe very descriptive, like what it is about, what do you do the why you decided to be part of it ?

96 Kate: Okay. I decided to be part of it just because I wanted to meet with other women in the department. A few things that they do is they they organized informal chats with women speakers that come to talk, like, women mathematicians that come to give talks here. um, there, they're also there's usually like one event, a month, like a fun event. We did like a trivia night event last year. Um, Let's see. They also organized the mentor and mentee program. So they just match up the graduate students here with the incoming graduate students. So that happens, like every summer into the spring semester. And then like organizing meals for them,there are also sponsor for a basic skills workshop, which is just a like a weekly workshop that does the variety, like professional skills. They sometimes do teaching workshops. I don't know how much AWM. I think it's like a funding thing. So it's not like, the basic skills workshop isn't an AWM meeting. It's just sponsored by them.

97 Weverton: So you mention that you want to like the reason why you joined is because you want to connect with other women. Why specifically want to connect with this women's?specific reason that it will thinking about that, Why I should reach out or why I should be part of this?

98 Kate: I wanted to have friends, and it's easier to make female friends first, for me at least. So I was like, well, that's a good place to go. Also, it's, I mean, women here, it's not 50/50. So I mean, you're in the minority. So it's nice to just have other people that you just have other people from the department that you know, it have like an extra connection beyond just being class together. So Let's see, I was in a math club at my undergraduate University. And it wasn't just for women, but it was women dominated. And so I liked going to those meetings. And I thought there might be something similar here. And I kind of found that. So that's the other reason why.

99 Weverton: How is the connection between because it feels like the math club is for undergrad. So How is this connection? Like the connection between the math club and grad students or no?

100 Kate: No. Probably the most interaction that they get is like, if you have a grad student as your TA for a class at an undergraduate isn't there's not really any direct line between them? At least not one that I know of. So there might be something it's just not something that I know.

101 Weverton: All right, it's fine. I know Nothing about these things that happen here, so it's all right. I will believe you, whatever.And What are your impressions of the professors in the math department?

102 Kate: I mean, generally positive, I don't really have anything really bad to say. They mean they try to be helpful. I think a lot of times they are so little intimidating, I don't know if that's me or if that's other people as well. But there they don't seem like standoffish or anything like that.

103 Weverton: Why do you feel like they are intimidating?

104 Kate: Just so like there's this saying, there aren't any stupid questions. But sometimes you can see that they think your questions a little stupid, like you don't want to go like,

105 Weverton: Is there any experience that you had that you felt like oh my question is stupid?

106 Kate: oh, not my experience. It's like when other people might ask questions, and you see their reaction to their question. And it's like, oh, I had a similar one. I'm glad I didn't ask it comes bigger and negative response. So It's just like, when I asked a question, I want to like, You know, I guess Good, good one, make sure I understand like the, the basics and try not to ask them questions

that they think are basic. And so a lot of times he I just don't know if my question is too basic or not. So I end up not asking.

107 Weverton: And How do you think we could encourage more students to pursue a Ph.D in mathematics?

108 Kate: Probably present the option earlier than undergrad. So like in high school? I think because there's still I think a lot of a lot of people know that you can do more than just teach with it. But like, it was never really advertised. To me When I was in high school. I just happen to know like, through my own, like looking things up. Just showing, like telling high schoolers that is not like a dead end to get a Bachelor's in math that. Yeah.

109 Weverton: Can you recall the earliest significant memory of doing something that involves the use of mathematics? And why was significant for you?

110 Kate: Does anything outside of school that used math?

111 Weverton: Yeah it could be long ago, like when you were like six years old seven.

112 Kate: Okay, let's see. The earliest time? [think for a long time] Does it count? Just doing? Like simple math? Like what kind of just anything? Oh, then just like calculating sale prices or something? I think that's the earliest.

113 Weverton: Was there any other moment that you had some experience that was really significant? Any was related to math? Maybe Elementary School let's say?

114 Kate: I don't think I can remember anything in elementary school? [interviewer: middle school] Let's see. Um, well, I'm, I did Taekwondo when I was younger, and I ever met, I remember like thinking about like, the angles for things like when we are doing different, like kicks and stuff. That's probably the earliest one I can think of that would be an elementary school. Because I started when I was in like, second grade. Yeah.

115 Weverton: Nice. And, is there any change that you think we could do in the PhD program in mathematics?

116 Kate: Any change? [think for a long time] I don't know, I feel like I haven't been here long enough to know what would be a good thing to change.

117 Weverton: so So far, you feel like everything is okay? [Kate: Yeah, I think so] And Why do you think students give up, obtaining a PhD in mathematics?

118 Kate: Ah probably, I think sometimes they realize the career they aspire to just doesn't need a PhD. if you are just tired of being in school I know like burnout happens. And so by the time you're like, a third year PhD student, you've already been in school for 16 17. Over 18 years, so it's, yeah, there's definitely burnout that happens. And Yes, you can just decide you want a job that doesn't require the PhD. So you could quit? I think another reason why just, it could be frustration with, you know, getting to the research stage and not having like an answer to your question anymore. Like homework is always like, there's always a solution to the homework. But you know, when you get to the research part, it can, it can be hard to deal with, like not being able to double check yourself. And that can be data can just be frustrating, if that's what you're used to, if you're used to having answers. Or if you're used to Things just being immediate, that something that doesn't happen in grad school, things usually aren't immediate.

119 Weverton: So, you talked about, um, when you were talking about the future, We talked about maybe becoming a researcher or working in the industry or economic policy. And when you talk about being a researcher, I, you did talk a little bit about letting people know that math is beyond calculus it matters and why it matters. In that research part does it include teaching, like,

120 Kate: I wouldn't say, like, I see myself teaching, and the future doesn't doesn't mean it won't happen. You know, things always change. But right now, I don't mind teaching. It's just not I don't get a lot of enjoyment from it.

121 Weverton: So that, so that profession as a research and would that be like in like researching university or a researcher in the industry, like?

122 Kate: I see it more as like an industry position.

123 Weverton: Awesome. And, and, and how do you see research mathematics? Like you to define it in your way? Like, what does that mean to you?

124 Kate: It's either finding a better or creative solution to something, I guess it depends, you know, like, where you are in industry, if that means like, Oh, I'm making this you know, modeling, making this like mathematical model more acurate,make it incomporate more variables, yeah just making it more realistic or if it's in finance, you are trading companies things like that, or algorithm development, just finding a more like, faster, different way to do things.

125 Weverton: Cool. All right. No I have a task for you. And something that it does not require you to have a lot of ability, But if you do, you can just, you know, explore your abilities, some people they feel like I can't do it, other feel like okay i can do it. So I would like you to draw for me the ideal mathematician.

126 Kate: Okay. [drawing]

127 Weverton: Yay. Can you tell me what he did? What are you thinking about.

128 Kate: So, I put a black a put a chalkboard. which are, usually green? I feel like good mathematicians are a little old fashioned. So they can use chop? do their work on a chalkboard have them facing this way? Because I feel like, they're very, like absorbed in their work. And casual dress that you don't really, I don't really see a an ideal mathematician that's like someone in a suit and tie or anything like that. Yeah. Those are the main points.

129 Weverton: Were You thinking about gender when you try it?

130 Kate: No, not really.nThat's why I didn't, I never want to have them facing forward. Because there's not like a face that I associate with mathematics. And there's also not like a skin tone. So I just did black outline. And then brown just cuz I thought it would look better with the colors. Okay. [there are some additional conversation not relevant after this].