

MATH 53 DIS 202/204

STARTING THE SEMESTER

Jiazhen Tan

tanjz@berkeley.edu

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Outline

- ▶ About this course.
- ▶ About me.
- ▶ Office hours.
- ▶ Trying out tech and ice breaker.
- ▶ Course etiquettes.

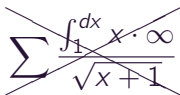
Three things we use: Zoom, bCourse, Gradescope.

About this course

- ▶ This class is about multivariable calculus.
- ▶ Math has both **theory** and **computation** - so is this class.
- ▶ Some theorems proves computational methods.
- ▶ Other theorems makes more abstract claims.
- ▶ Understanding theory needs
 - ▶ a lot of examples
 - ▶ a lot of computations
- ▶ more theory $\neq$ harder class $\neq$ more learning
- ▶ Our professor is experienced with teaching multi calc, but PhD students (like me) might know too little about computational techniques, and bring this bias to class.
- ▶ Alert me if I'm not discussing stuff you want to learn!

Grading

- ▶ 5% HW, 5% Quiz.
- ▶ Format: as long as Gradescope accepts (PDF, jpg, gif, png); written/typed both ok.
- ▶ Submit HW in the section specific Gradescope course.
- ▶ HW grading on sensible completion. Return by Tues 4pm. Ungraded bCourse quiz for checking your own answer?



The image shows a mathematical expression that has been crossed out with a large 'X'. The expression is $\sum \frac{\int_1^{dx} x \cdot \infty}{\sqrt{x+1}}$. The 'X' is drawn with two diagonal lines, one from the top-left to the bottom-right and another from the top-right to the bottom-left, intersecting the expression.

- ▶ Deadline is before Monday section and late submission is due 28 hours after. You have 4 chances to submit it late.
- ▶ Collaboration is good; make sure to cite your collaborators.
- ▶ Link to desmos or cite your graphing tools.

Homework 1

Week One: Due Week of August 31st

- ▶ Section 10.1: 1, 2, 3, 5, 7, 11, 12, 24, 37, 38
- ▶ Section 10.2: 1, 2, 3, 4, 5, 11, 13, 17, 18, 19, 29, 30, 32, 33, 41, 42, 43, 44, 48, 51, 52, 53, 73, 74

For Tuesday: Read 10.3, 10.4 ,10.5, 12.1, and 12.2.

For Thursday: Read 12.3, 12.4, and 12.5.

PROF. SETHIAN'S COURSE SITE:

https://math.berkeley.edu/~sethian/math53_fall20.html

Quiz

- ▶ Weekly quiz on bCourse.
- ▶ Friday 8/28, 9/4, 9/11, 9/18, 9/25, 10/2, 10/9, 10/16, 10/23, 10/30, 11/6, 11/13, 11/20, Wednesday 12/2.
- ▶ Fri 12pm (noon) until Sat 12pm (noon) (Poll)
10 min time limit. Will poll again next Friday using a untimed quiz.

You only get 7 minutes if you start on 11:53am Saturday.

- ▶ A double time version if LoA. Contents are the same.
- ▶ Email me for tech trouble, with “proof”.

For clarification, questions about correct answer listed etc, discuss in person, at my office hours or sections.

- ▶ Extra extensions, accommodations, let me know in advance.

About me

- ▶ 1st year math PhD student
- ▶ Was math major in college
- ▶ Learned a bit of theoretical CS; didn't took any physics.
- ▶ Math interest: undecided. Took classes in analysis, algebra, and just general number theory. Also algebraic topology.
 - ▶ decided to major in math after a two semester multi calc+linear algebra sequence freshman year.
 - ▶ Wanted to add CS double once but dropped.
- ▶ Let me know if there are specific topics/applications you want to mention in the sections.

Office Hours and Resources

- ▶ Tentatively Thursday 8-9pm and Saturday 2-3pm at the discussion section link. (Poll)
- ▶ If a group of you have questions need extra OH other times: Calendly link.
- ▶ Do we want a group chat? (Poll) Slack seems accessible + good for organizing discussion in threads
- ▶ Canvas has a forum; you can populate it. (When more people use it, more people check it)
- ▶ List of tutors:
<https://math.berkeley.edu/courses/tutoring>
- ▶ Student Learning Center: <https://bit.ly/SLC53>

POLICIES

- ▶ When sharing course material - give people a link to our bCourse/website/folder.
- ▶ (When in person) let the instructor know in advance if you are taking pics of the board; avoid including the instructor in your photos.
- ▶ We won't record our discussion so people feel safe asking questions.
- ▶ If you records class discussion, transcribes the discussion, and distributes the transcript to your study group, let me & the class know.
- ▶ Do we want to allow auditor & visitors? (Poll)

EMAIL ETIQUETTE

I'm also new to the “professional” world.

- ▶ Include “**Math 53**” in the title.
- ▶ When emailing prof/GSI, use your school email, if you can access it.
- ▶ If not, let the staff know your preferred address now.
 - ▶ Important notifications from Canvas may get automatically sent to your berkeley.edu email otherwise.
- ▶ You can make a dummy email for sending anonymous feedback.
- ▶ If you signed with your own name, ~~dysania@example.com~~

Q&A ETIQUETTE

- ▶ Do not ask math questions over email; discuss in person, in office hours/section/lecture.
- ▶ Sometimes some GSI do reply, but for the GSI it'll be tempting to spend all day writing emails once everyone is emailing...
- ▶ (For a small class, < 7-10 people, emailing instructors with HW questions may be OK)
- ▶ Email is mostly for non math: logistics, accommodation, suggestion.

Q&A - WHAT TO DO

- ▶ There is never a bad or silly question - ten others in the class are probably really glad you asked it.
- ▶ Much better to interrupt than stay confused for the next 40 minutes.
- ▶ If multiple people are answering a question, we can let one person talk and others type their answers in the chat.
- ▶ State the problem you have, explain what you have tried and not work, or how you arrived at a wrong answer, and what you are stuck on.
- ▶ Don't discuss quizzes before the 24 hour deadline.

ZOOM GUIDELINES

- ▶ Set your preferred name, maybe also your pronouns.
Example: Jessie (she/her)
- ▶ Let's try camera on and see if it will make some of our internet crash. If so, we stop.
- ▶ Keep muted when you are not talking.
- ▶ Features for section activities should work on laptop/tablet/smart phone.
- ▶ If you need help with access, check with the Student Technology Equity Program **(STEP)** for accessing a laptop, Wi-Fi hotspot, and webcam, headphones, etc.
- ▶ If you (really) don't want the whole class to see a message, don't use zoom to private message - it's easy to accidentally reply-all.

Other Guidelines, Links

- ▶ I won't add people on social media (if I am your GSI for future semesters I also cannot add you during those semesters).
- ▶ Guidelines for Scheduling Conflicts:
<https://bit.ly/32CKLL2>
- ▶ My Course Website:
<http://pi.math.cornell.edu/~tanjz/53/>
- ▶ Extra OH signup, in group: see bCourse announcement.
- ▶ Student Learning Center: <https://bit.ly/SLC53>

Desmos

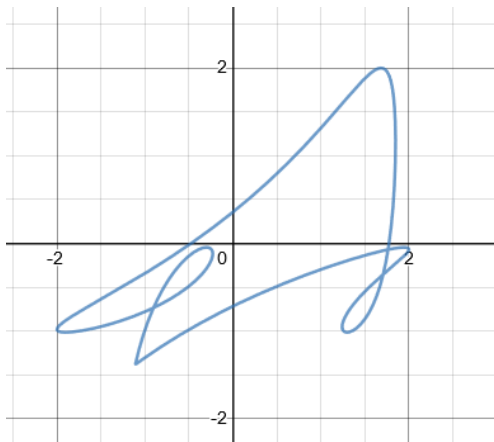


Figure: <https://www.desmos.com/calculator/ouobakqewe>

Desmos

- ▶ Can you parametrize the $y^2 = x^3 - x$ or $y^2 = x^3 + x$ curve?
- ▶ Can you shift $y^2 - y = x^3$ down a little bit?
- ▶ Can you draw the lower case d ?
- ▶ <https://www.desmos.com/calculator/9a3a1pgx5l>
<https://www.desmos.com/calculator/xl2yo15ow1>
- ▶ I will break people into breakout rooms. For each breakout room,
 - ▶ Come up with some shapes or parametrized functions you would like to graph.
 - ▶ Together, find a way to graph it, or find a function you do not know how to graph.
- ▶ Come back after 10 minutes and share whatever you have with the class! Unfinished projects welcome.

Questions?