#source

# 1 | General Aftercare

- Assignments on Canvas (preferably a PDF)
- Collaborate as much as possible
  - Learn and share ideas together
  - Collaborate well together
- Nikhil TAing!! ;)
- ~30 mins of HW/class period. *time* the assignments and write it down on top.
- Tests are take home, duh (COVID NOISES!!), and are Assigned Wednesday, Due on Monday)

**Expectations** * A notebook should be maintained + some solved sample problems * Homework assigned each class * HW graded for Habits of Mind rubric * One graded assignments every two weeks or so

Textbooks: https://math.libretexts.org/Bookshelves/Calculus/Map%3A_Calculus__Early_Transcendentals
https://math.libretexts.org/Bookshelves/Calculus/Book%3A_Calculus_(Apex)
or
https://openstax.org/details/books/calculus-volume-1
https://openstax.org/details/books/calculus-volume-2

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# 2 | Knowledge Points This Semester

- Limits
  - Eplison delta proofs
  - Limit laws
  - Evaluating functions
  - Prove limit laws
- Continuity
  - Types of continuity + discontinuity
  - Define continuity
  - Immediate value theorem
    - Application +
    - Boundedness
- Derivatives
  - Limit definition of derivatives
  - Define differentialibity
  - Understand how the first and second order derivatives
  - Talor Series approximations
  - L'Hospital rules for limits w/ indeterminate rations, indeterminate products, indeterminate products
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  - a final project

**Everything you use on tests must be derived by you.**

=> Make test corrections + consider reassessing (immediately) if necessary + meet with instructors & TAs during *Wednesday lunch* or *Friday tutorial*

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# 3 | So, what *is* Calculus?

- The analysis of change
- Study of curves
- Study of rate-of-change

## Rate of change

We have seen this before: **Slopes!**

> The rate of change tells you the relation in the trend of the graph. Think! Negative and positive functions!

Definition 1 · **First order rate of change** How much is the function changing over a period of time?

Definition 2 · **Second order difference** How much is the rate of change changing over time?