Using LaTeX in SageMathCloud (part 1)

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January 23, 2017

Lecture 6 from Math 152: Intro to Mathematical Software (University of California, San Diego
based on lectures by William Stein, University of Washington

Announcements

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1. Discussion sections meet as usual this week. Please attend your assigned section.

2. No instructor office hours this Tuesday. TA office hours meet as usual.

3. HW 2 due Tuesday, January 24 at 8pm. Correction: problem 3c should read "The set of positive integers $n < 1000$ such that $n^3 \equiv 1 \pmod 3$."

4. HW 2 peer evaluations due Thursday, January 26 at 8pm.

5. We are still monitoring the waitlist. We will email you if space becomes available.

General Remarks about LaTeX

LaTeX...

1. Create professional quality documents involving mathematics. Most research mathematicians (and many scholars in nearby disciplines) use LaTeX for writing their papers.

2. Completely open source and free. You can install it anywhere.

3. There are many ways to use LaTeX, but SageMathCloud is one of the easiest for beginners.

LATEX Tutorial: first steps

Do the following

1. Create a new blank latex document.

2. Edit it, changing the title and your name, and seeing the result to the right.

3. Find a random math-related wikipedia article, and copy/paste a paragraph of text into your document (this shouldn't work too well, but gives you some math to play with).

4. Try out forward and inverse search.

5. Make errors and see them listed under issues.

6. Download the PDF.

7. Click build, then latex to see the output.

8. Change preview zoom and resolution.

LATEX Tutorial: next steps

Do the following

1. In your document, type some formulas surrounded by dollar signs. Try each of the following and some variations on them:

2. `$x^3$`

3. `$\sin(x^\pi)$`

4. `$e^{2\pi i}$`

5. `$\frac{2}{3 + x}$`

6. `$1 + 2 + \cdots + n$`

7. `$\sum_{i=1}^{n} i$`

8. `$\int_{0}^{\pi} \sin(x)$`

9. `$\sqrt{x^3 + 2}$`

LATEX Tutorial: sagetex

Do the following

1. Put \usepackage{sagetex} in the **preamble** of your latex document. This means put it after \documentclass... and before \begin{document}.

2. Try typing this formula in: $2018 = \sage{factor(2018)}$.

3. Once that works, try some things from http://mirrors.ibiblio.org/CTAN/macros/latex/contrib/ sagetex/sagetexpackage.pdf

4. \sageplot[width=.7\textwidth]{plot(sin,0,1)}

Plot