

MATH 110A—WRITING ASSIGNMENT 02

Due: Sunday February 10, by 7PM

Getting Started

1. Read the [Learning L^AT_EX](#) document here:

<https://v2.overleaf.com/read/zkfgxndfnbcb>

If you have trouble finding the command for a math symbol you want to use, try looking in this document:

<http://mirror.hmc.edu/ctan/info/short-math-guide/short-math-guide.pdf>

2. Get the template for this assignment. Here's how to do it:

- Go to <https://v2.overleaf.com/>, and **make sure you are logged in**.
- In a new window, go here:

<https://v2.overleaf.com/read/nvbwzxtmkmb>

- Click on the menu icon in the upper-left and select “Copy Project”
- When ask for a name, choose something like “Math 110A - WA 02” and click “Copy”
- When this completes you will be back in your own workspace (instead of mine).
- After solving the problem(s), type them up using the template.
- Email me your final draft.

3. Let me know if you have any questions!

Please type up your proofs to each of the following problems in L^AT_EX. Make sure to use complete sentences and appropriate punctuation. Also, make sure to edit for typos. Email me your final draft.

And please email me if you have any questions!

1. Define $*$ to be the binary operation on \mathbb{R} defined by $a * b = 1 + ab$. Prove that $*$ is not associative. (See Problem 2.28.)
2. Let $\mathbb{R}^* = \mathbb{R} \setminus \{0\}$. Prove that (\mathbb{R}^*, \cdot) is a group (where \cdot denotes usual multiplication). (See Problem 2.36.)
3. If G is a group, then G has a unique identity element. (See Problem 2.37.)

You will see in the template that I got you started, but feel free to erase what I wrote.