

MATH 110B—WRITING ASSIGNMENT 04

Due: Sunday September 22, by 7PM

Getting Started

1. 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://www.overleaf.com/read/bmbxjvhsqfqq>

- Click on the menu icon in the upper-left and select “Copy Project”
- When ask for a name, choose something like “Math 110B - WA 04” 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.

2. Let me know if you have any questions!

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>

Please type up your proofs to the following problems in L^AT_EX. Take care to use complete sentences and appropriate punctuation, and make sure to edit for typos. Email me your final draft. *Please let me know if you have any questions!*

1. Let F be a field. Prove each of the following.

- (1) For all $x \in F$, $x \cdot 0 = 0$.
- (2) For all $x, y \in F$, $(-x)y = -(xy)$ and $x(-y) = -(xy)$.
- (3) For all $x \in F^*$, $-x \in F^*$ and $(-x)^{-1} = -(x^{-1})$.

(See Theorem 3.50.)

- *Make sure to clearly state when you are using a definition, lemma, theorem, corollary, or fact from the notes.*
- *You will see in the template that I got you started, but feel free to erase what I wrote.*