MATH 110B—WRITING ASSIGNMENT 08

Due: Sunday November 3, 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/hfxzrgnxdvpw

   - Click on the menu icon in the upper-left and select "Copy Project"
   - When ask for a name, choose something like "Math 110B - WA 08" 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 LaTeX. 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 $\phi : R \to S$ be a ring homomorphism. Then ϕ is injective if and only if $\ker \phi = \{0\}$.
   (This is only half of Theorem 5.117.)

- *Make sure to clearly state when you are using a definition, lemma, theorem, corollary, or fact from the notes.*