

# MATH 110A—WRITING ASSIGNMENT 10

Due: Friday May 10, by 7PM

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## 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://v2.overleaf.com/read/grfckhtbtsqn>

- Click on the menu icon in the upper-left and select “Copy Project”
- When ask for a name, choose something like “Math 110A - WA 10” 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 each of the following problems in L<sup>A</sup>T<sub>E</sub>X. 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. For every prime  $p$ , if  $G$  has order  $p$ , then  $G \cong \mathbb{Z}_p$ .  
(Theorem 5.21.)
2. If  $m$  and  $n$  are relatively prime, then  $\mathbb{Z}_m \times \mathbb{Z}_n$  is cyclic.  
(Only one direction of Theorem 6.13.)
3. Let  $G$  be a group, and  $H \trianglelefteq G$ . If  $G$  is abelian, then  $G/H$  is abelian.  
(Theorem 6.36)