MATH 110A—WRITING ASSIGNMENT 10

Due: Friday May 10, by 7PM

Please type up your proofs to each of the following problems in LaTeX. 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)