MODERN ALGEBRA
SPRING 2025

ASSIGNMENT 11.1
DUE APRIL 16

Exercise 1. Lang, II.7.1. [*Remark.* If $(A, +)$ is abelian, $B < A$, and $n = [A : B]$ is finite, then $na \in B$ for all $a \in A$. Why?]

Exercise 2. Lang, II.7.3.

Remark. These problems are not unrelated. It's possible to prove the first as a consequence of the second, by taking f to be the natural epimorphism $A \to A/B$. The trick is how to construct g...