

## Homomorphisms

## Why

We name a function which preserves group structure.

## **Definition**

A homomorphism from group (A, +) to group  $(B, \tilde{+})$  is a function  $f: A \to B$  such that  $f(e_A) = f(e_B)$  for identities  $e_A \in A$  and  $e_B \in B$  and  $f(a + a') = f(a)\tilde{+}f(a')$  for all  $a, a' \in A$ .

## **Notation**

TODO

