

# Homework 9

Due Friday, March 5, 2021

This week's homework is on the lighter side because you're also working on your projects.

1. Let  $G$  be a group, let  $a, b \in G$ , and let  $H \subset G$  be a subgroup.
  - (a) Prove that  $aH = H$  if and only if  $a \in H$ .
  - (b) More generally, prove that  $aH = bH$  if and only if  $b^{-1}a \in H$ .

Also do **§6.3 #13 and 18**.