MATH 3340: Abstract Algebra

Problem Set 4

Due Wednesday, February 26, 2020

You are allowed to work in groups, but the solutions you hand in should be written by you only.

Instructions on how to hand in pset:
https://gradescope-static-assets.s3-us-west-2.amazonaws.com/help/submitting_hw_guide.pdf

Cornell Libraries have free scanners, if needed:

https://olinuris.library.cornell.edu/print-scan-wifi

Read Sections 3.3, 3.4, in full , 3.7 up to and including Definition 3.7.5 and 3.8 up to and including Example 3.8.3.

Hand in solution to following problem: Let H be a subgroup of the group of the group G, and let $a, b \in G$. The following conditions are equivalent:

(1) $Ha = Hb$

(2) $Ha \subseteq Hb$

(3) $a \in Hb$

(4) $ab^{-1} \in H$

(5) $ba^{-1} \in H$

(6) $b \in Ha$

(7) $Hb \subseteq Ha$

Suggested homework problems from Sec 3.3.: 6*, 9*

Only hand in the problems with a *.